

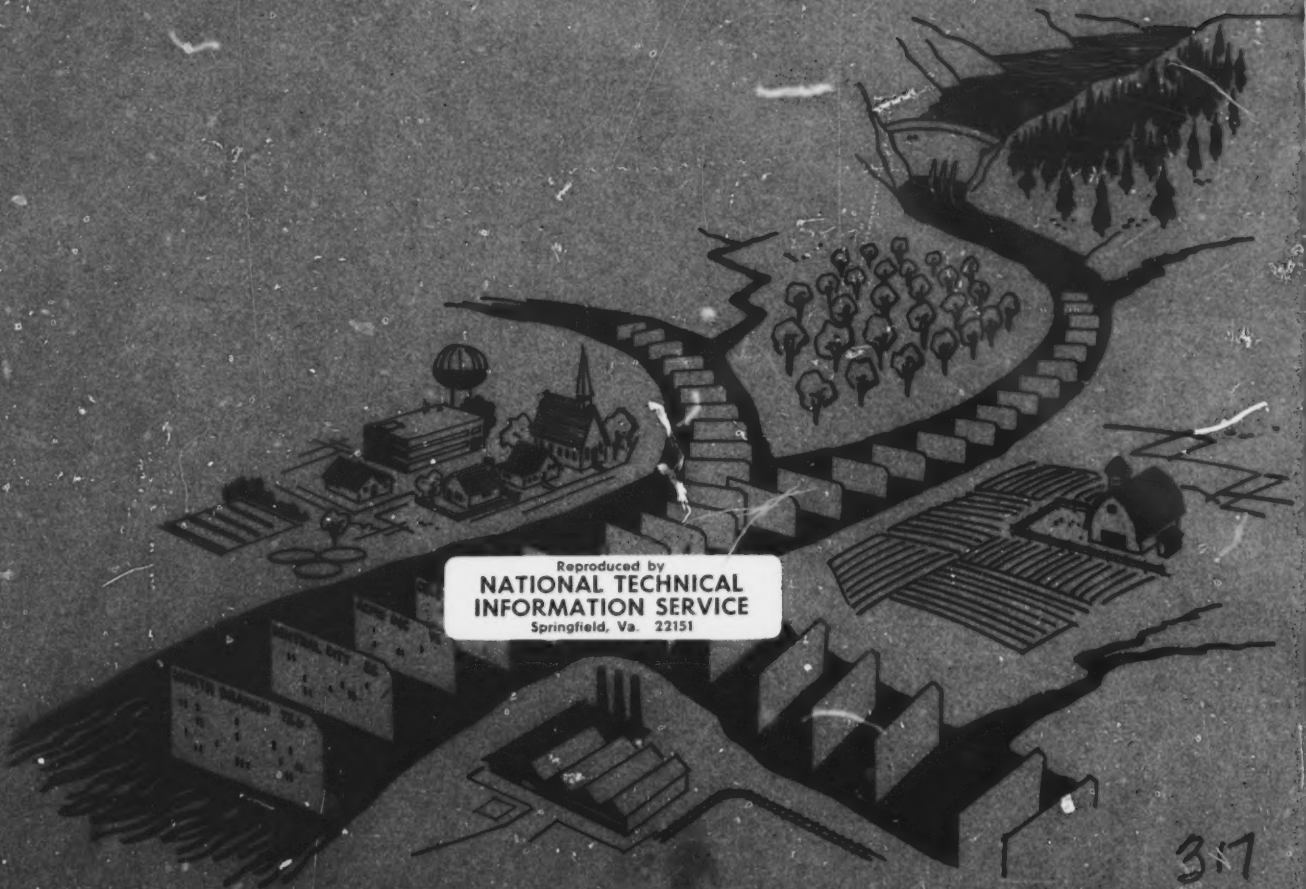


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Factors Affecting Pollution Referenda



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16. Abstract Defeat of a pollution control bond in a local community can result in a significant delay in the implementation of the Federal Water Pollution Control Act. Hence, it is important that the Environmental Protection Agency understand what factors affect the outcome of municipal bond elections so that it can offer assistance wherever possible. Initial statistical investigation identified 34 independent variables associated with the outcome of bond elections in a non-random pattern. Regression analysis then identified eleven variables which together explain 62% of the variance in the outcome of bond elections for water pollution control. These eleven variables can be grouped into four categories: population characteristics, community characteristics, characteristics of the bond issue, and campaign characteristics. The variables positively associated with passage of bond issues are (1) proportion of population with family income less than \$3,000, (2) existence of a pollution problem, and (3) repayment by user charges. The variables negatively correlated with passage are (1) median income, (2) population growth, (3) municipal tax rates, (4) amount of the issue, (5) repayment by increased taxes, (6) existence of opposition groups, (7) partisanship of groups in the campaign, and (8) the number of criticisms raised. (Settle-Wisconsin)				
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Factors Affecting Pollution Referenda

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for the

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ABSTRACT

Many local governments wanting to finance construction of water pollution control facilities through the sale of municipal bonds are required to obtain authorization from the electorate in the form of a bond referendum. Since defeat of such a bond issue can result in significant delay in implementation of the Federal Water Pollution Control Act, it is important that EPA understand the factors which affect the outcome of these elections.

A sample of 40 bond referenda for water pollution control projects (20 which passed and 20 which failed) was drawn from a comprehensive list of recent elections. Six were studied via in-depth field studies, and the remainder were surveyed by telephone. For each case study, at least the following municipal employees were interviewed: clerk controller, planner and engineer. A representative of the media was also questioned. Data were collected on variables, which were analysed using correlation analysis, contingency tables, and linear regression analysis.

Eleven of these variables studied are able to explain 62% of the variance in the results of the election: proportion of the population with family income less than \$3,000; median income; association of the project with a pollution problem; rate of population growth; tax rate; dollar amount of the proposed issue; repayment of the bonds by increased taxes; repayment of the bonds by user charges; pressure groups against the issue, number of criticisms raised; partisanship of groups.

The study contains conclusions and recommendations about the process by which the project is planned, the role of the bond market, and the referendum as an approval mechanism for public expenditures.

This report was submitted in fulfillment of Contract Number 14-12-902 under the sponsorship of the Office of Water Programs, Environmental Protection Agency.

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SUMMARY

Nature and Scope of the Problem

The cost of water pollution control facing the nation is immense. Recent estimates of the cost of implementing the Federal Water Pollution Control Act during the period 1969 to 1973 have been as high as \$31 billion. If present trends continue, the bulk of the burden for financing these investments will fall to local governments.

Most local governments finance construction of water pollution control facilities through the issuance of municipal bonds. However, because of the statutory and constitutional limitations on municipal indebtedness, many local governments wanting to sell bonds are required to obtain authorization from the voters in the form of a bond referendum. Defeat of a pollution control bond in a local community can result in a significant delay in the implementation of the Federal Water Pollution Control Act. Hence, it is important that the EPA understand what factors affect the outcome of municipal bond elections for such projects so that it can assist local governments where possible and improve the effectiveness of their own program.

No comprehensive published data exist which relate the total number or amount of water pollution control bonds issued after referenda to the total water pollution control bonds issued. However, an estimate made from data provided by the Investment Bankers Association of America and corroborated by expert opinion suggests that about 40% of all bonds issued are subjected to a direct vote by the electorate, and about 15% of these fail. Examination of the dollar amount of the bonds subjected to referenda shows that the more costly projects are more likely to be voted on, and also more likely to fail. Since the larger projects are located in more heavily populated areas, which are also most seriously affected by pollution problems, these failures have significant implications for EPA's program.

Data Collection and Analysis Methodology

In order to develop policy-oriented recommendations for use by the EPA and local municipalities, Abt Associates reviewed the entire referendum process, identifying the actions taken by government officials and others involved in the planning of pollution control which might affect the outcome of the vote. This process became the major guide for identifying the study's data requirements. One hundred fifteen of these factors were selected for study and thus became the basis for the design of the interview schedules.

A sample of 40 bond referenda for water pollution control projects was drawn from a listing of the municipal bond referenda published in the Daily Bond Buyer and compiled by the Investment Bankers Association of America. In order to compare the attributes of the referenda that failed with those that passed, an equal number from each of these two categories was sampled. For each case study, at least the following people were interviewed: city clerk, city controller or finance director, city planner, city engineer and a representative of the media.

When a referendum had been selected for study and measurements made of the variables of interest, then the data were ready to be organized and analyzed. A series of statistical analyses were performed, each one building on the results of the previous one. The first step was to examine the frequency distribution of each variable. This provided a general picture of results and identified some significant trends in the data. Then, the relationship between each variable and the outcome of the referendum was examined by means of cross-tabulation. Calculation and interpretation of various tests of significance for the cross-tabulations of all of the variables with the outcome of the election identified 34 independent variables associated with success or failure in a non-random pattern. This suggested that some, or even all of these variables might explain the variance in the results of the bond elections. The identification of these variables directed the study to the next phase of analysis: linear correlation analysis.

Linear correlation analysis was used to provide a single summary statistic describing the strength of association between all pairs of variables. In addition, it was used to identify indirect relationships and develop links between them. The linear correlation analysis and the cross-tabulations identified a large number of referenda characteristics highly correlated with the outcome of the election but not highly correlated with one another--that is, independent of one another. On the basis of this information a linear regression model was developed.

The linear regression analysis had two major purposes: to clarify the relationship of each independent variable to the outcome of the referenda, and to develop an analytical model capable of explaining the outcome of a referendum in terms of the percentage of votes in favor of the project. The regression analysis identified eleven variables which together explain 62% of the variance in the outcome of bond elections for water pollution control.

In addition to the analytical model developed to explain the maximum amount of variance in election outcome, a second model was developed using only a subset of the variables which could be measured well in advance of a bond election. However, this equation explains only 46% of the total variance in outcome and is, therefore, not a practical predictive model.

Summary of Findings

Eleven variables were identified by the regression analysis which explained 62% of variance in the outcome of the bond election. They can be grouped into four categories: population characteristics, community characteristics, characteristics of the bond issue and campaign characteristics.

Population Characteristics

- Proportion of population with family income less than \$3,000. Bond elections for pollution control projects are more likely to pass in communities with a high percentage of low income families. This may mean that poor people tend to vote in-favor of pollution control, but the data are not sufficient to warrant this conclusion.
- Median income. This variable has a weak negative correlation with outcome. It is possible that it plays a role in a linear combination of variables which together account for a substantial amount of the variance in the election results.

Community Characteristics

- Existence of a pollution problem. Data indicate that this variable is positively associated with approval of the bonds. This suggests that communities which were able to capitalize on current widespread concern for environmental quality were able to increase the percentage of votes in favor of the issue.
- Population growth. It was initially hypothesized that population growth would lead to pollution problems and therefore be associated with the passage of the bonds. On the contrary, population growth is associated with the failure of pollution control bonds, indirectly through a strong association with the number of groups organized against the bond issue.
- Tax rate. This variable is negatively correlated with bond passage. It appears that citizens in communities with high tax rates are less likely to support bond issues than citizens in communities with low tax rates.

Issue Characteristics

- Amount of issue: The amount of the issue is negatively correlated with passage of the bonds, indirectly through an intervening variable: the existence of groups against the issue with which the amount of the issue is positively associated. This suggests that the amount of the issue may be important because it stimulates controversy which, in turn, contributes to defeat.
- Method of repayment. Two variables measure the method of repayment: repayment by user charges and repayment by increased taxes. These variables are two of the most significant in the regression equation. Both are highly correlated with outcome--user charges positively, and increased taxes negatively. These results suggest that voters generally wish to avoid tax increases and therefore prefer the user charge method of repayment. The user charge is also more equitable, in the sense that those who benefit from the improvement also pay for it.

Campaign Characteristics

- Existence of opposition groups. This variable emerged in the regression analysis as the most important election characteristic; it accounts for 41% of the variance in election outcome. The power of opposition groups lies in their ability to create doubt in the minds of the undecided voters. When there is organized opposition, there is little that proponents can do to make an issue pass. In the absence of organized opposition, it is unlikely to fail.
- Partisanship of groups in the campaign. Most of the local governments in our sample of 40 cases are non-partisan governments. In non-partisan systems, the emergence of a partisan group in a bond election campaign tends to contribute to the defeat of the issue at hand.
- Number of criticisms raised. There is a significant positive correlation between the number of criticisms raised and the defeat of a bond issue. These projects which stimulate criticism and controversy are much

more likely to be defeated. Like the emergence of opposition groups, criticisms tend to create doubts in the minds of voters who then choose not to spend money on a project of uncertain benefit.

Conclusions and Recommendations

This study of the factors influencing the outcome of municipal bond referenda has identified three major aspects of the municipal bond process which, if changed, would increase the likelihood that local financing would be approved for construction of a pollution control facility. They are the process by which the facility is planned; the financial environment, particularly the bond market; and the approval mechanism required.

The Planning Process. The major conclusion to be drawn from this study is that bond elections for pollution control projects are won or lost during the initial planning of the project. Critical decisions are made at this time concerning who will benefit from the improvement, who will pay the costs, and how they will be paid. If everyone potentially interested in the construction of the project is not contacted at the outset, or if other mistakes are made at this time, there is little that the issue's proponents can do during the actual campaign to encourage passage of the bonds.

A decision about the means of financing is an especially important part of the project plan. Analysis of the case studies reflects clearly the voters' aversion to increased taxes and their desire for an equitable repayment mechanism. Furthermore, reduction in the amount of the issue through the use of Federal or State financing seems to improve the chances of the bond's passage.

Abt Associates recommends that the Environmental Protection Agency assist local governments in planning water pollution control projects, particularly those requiring a bond election. The objectives of this assistance would be to:

- Increase local officials' awareness of the implications of their decisions regarding the nature of the proposed project and the means of financial that project for the outcome of the election.

- Increase local officials' awareness of the importance of consulting all interested groups before making these decisions.
- To provide local officials with the information and insight necessary to make decisions which will be more acceptable to the majority of the citizens they serve.

Abt Associates further recommends that this information be disseminated through a handbook for local government officials prepared by the Environmental Protection Agency in cooperation with the state water pollution control agencies, and distributed by these state agencies to local governments. These handbooks should be tailored to meet the requirements of each state and include the following items.

- A checklist of important community groups which might be concerned with water pollution control and sewer or drainage improvements. This checklist should also indicate in detail the interests of each group regarding any kind of water pollution control project.
- Complete and easy-to-use information on grants available from the State and Federal governments, including a description of the aims of each program, the amounts of assistance available, eligibility requirements, and instruction on where and how to apply, and how to obtain qualified technical assistance where necessary.
- Descriptions of alternative means of financing sewer and drainage improvements, with emphasis on more innovative schemes which are acceptable both to the voter and the ultimate buyer of the bond.

The Role of the Municipal Bond Market. The second major influence on the outcome of the bond election is the financial environment in which the bonds are formulated. Since there are a very large number of municipal bonds and relatively few buyers, the market is extremely competitive. This permits buyers to be very selective about the bonds they buy. Major factors in their choice are the terms of the indenture agreement between them and the seller, especially the method of repayment.

The terms which are of advantage to the buyer generally operate against the interests of the seller: the municipality trying to raise capital for its pollution control project. Hence, it would be to the advantage of local municipalities to reduce market competition sufficiently to permit small, unrated towns to sell their bonds. To accomplish this, Abt Associates recommends the following:

- The Environmental Protection Agency should formulate a model indenture for municipal water pollution control bonds which would eliminate minor differences between essentially like bonds and reduce some of the competition among sellers. This would enable the proponents to give more consideration to the preferences of the electorate when formulating the bond issue.
- The Environmental Protection Agency should investigate the feasibility of a model statute to establish State bond banks. Since the states are limited in number, carry up-to-date credit information, and have greater financial resources (and thus, flexibility in entering the market), their bonds are more marketable.
- The Environmental Protection Agency should investigate the possibility of developing new types of financing for water pollution control facilities which would have characteristics attractive both to the voters and to the bond market.

The Approval Mechanism. Many local governments must obtain the approval of their electorates before they can issue municipal bonds for water pollution control projects. For many municipalities, this requirement is imposed by state statutory or constitutional law. While it is often desirable to hold a referendum on an important matter of public policy, some local governments have the power to avoid this approval mechanism and would like to do so. Since the legal requirements can be quite complex, they are often unaware of their opportunities and requirements. In order to expedite local financing for pollution control facilities, Abt Associates recommends the following:

- Local government officials receive current information of all available means of obtaining financial support for pollution control. This information should be a part of the local government handbook recommended above.
- Further, the Environmental Protection Agency should initiate formulation of a model state water pollution control act which would expedite both local financing and regional cooperation for water pollution control. This act would expedite local effort by simplifying the legal process required for approval, and by providing opportunities for alternative approval mechanisms to the referendum.

CHAPTER 1

PROBLEM DEFINITION

Problem Definition

The 1968 report entitled the Cost of Clean Water estimated the cost of carrying out the Federal Water Pollution Control Act during the period 1969 to 1973 at \$24 to \$26 billion, exclusive of the cost of separating storm and sanitary sewers, and the cost of coping with agricultural runoff, mine drainage, oil pollution and other special problems.¹ Included in this total were the following:

- \$8.0 billion for municipal treatment works
- \$6.2 billion for sanitary sewer construction
- \$2.6 to \$4.6 billion for industrial waste treatment
- A maximum of \$1.8 billion for industrial cooling treatment
- \$5.3 to \$5.7 billion for operation and maintenance costs of municipal and industrial treatment facilities

Since this estimate was made, further study of the costs of municipal treatment has increased that estimate from \$8.0 to \$10 billion.² Assuming historical increases in construction costs, a more realistic total would range between \$28 billion and \$31 billion. It is clear from these projections that the cost of water pollution control is immense. The next question which must be addressed is how this investment is to be financed.

If present trends continue, the bulk of the burden for the financing of needed investments will fall to local governments. Although the Federal government has undertaken many grant programs which provide funds for the construction of water pollution facilities,³ Federal contributions account for only a small portion of the total investment. One estimate, made in 1966, showed that the Federal share of the sewage treatment

projects with Federal assistance has been about 20%. In those same projects, the State share has been only 2%.⁴ More recent information is provided by the Federal Water Pollution Control Administration which pointed out that, for every dollar provided to State and local governments under its program of grants for treatment facilities, there has been a contribution of \$5.20 from State and local governments.⁵

A projected investment of \$31 billion over a five year time period will require significant financial commitment by local governments. While the Federal government has excellent estimates of total investments needed, it has very little information about the problems facing local government which, in the last analysis, will determine whether this investment can or will be made. One of the problems which has adversely affected water pollution control in the past is the failure of local communities to raise their share of the investment.⁶

There are many constraints on local governments which affect their decisions about investment in water pollution control facilities. First, there is the national financial climate: the interest rate, and in particular the competition of the bond market for the most attractive bonds. Second, there is the financial situation of the local government itself, which is especially significant in times of rising costs and stable or declining revenues. Coupled with this are local political constraints on municipal investments which reflect needs for other services which compete with funds that might otherwise be available for water pollution control. The level of contribution from the State and Federal governments to projects of this type is also influential. Finally, there is the fact that water pollution cuts across political and geographic boundaries, and the responsibility for controlling it is often ambiguous, leaving many problems unsolved.

Most local governments finance construction of water pollution control facilities through the issuance of municipal bonds.⁷ However, because of

statutory and constitutional limitations on municipal indebtedness, many local governments which wish to sell bonds are required to obtain approval from the electorate before they may proceed. This requirement dates back to the time of the railroad boom in which many towns in the West and Midwest invested. When many of the railroads failed, the towns through which they passed lost substantial sums of the taxpayers' money. To prevent this from happening again, most of the towns and states which had been affected established referenda requirements for all public investments. Thus, in addition to the general constraints on municipal finance mentioned above, some local governments also face the problem of a referendum.

Indeed, for those governments which are required to hold a bond election (and for which a successful referendum is the only route to the construction of water pollution control facilities), it is important for the Environmental Protection Agency to know what factors affect the outcome of that election. Hence, the tasks of this study were to investigate: What factors account for voter response to bond referenda? What strategy should be followed to maximize the ability of local governments to present water pollution control issues successfully to the public?

Extent of the Problem

The extent to which bond election law affects the ability of local governments to issue bonds for water pollution control projects has never been systematically studied. Several different approaches might be taken to this problem. One could compare the dollar amounts of bonds sold which were approved by referendum with the amounts of those sold without referendum approval. This would give the best overall picture of the magnitude of the problem. A comparison of these figures with information on the numbers of bonds issued with and without referenda would indicate if referenda were more often held with large or small issues. A second approach would be to survey State constitutions and statutes for referendum requirements. This would identify the States with statutory requirements, which are more easily amended. However, because of the importance of local charter law, this would underestimate use of the referendum. A third approach would be to examine the frequency of referenda held in recent years by State. This would point out the States which held a large number of referenda, whether or not they were required under the State constitution or statutory law. All three of these approaches have been taken in defining the role of the referendum in pollution abatement. The results are discussed below.

Dollar Volume Extent of the Problem. No comprehensive published data exist which relate the total amount of water pollution control bonds issued after referenda to the total amount of water pollution control bonds issued. However, an estimate of the extent to which improvements of this type a subjected to referenda can be made from the annual reports of the Investment Bankers Association of America. Included in their reports are annual data on the number and total dollar amount of bonds is issued for water pollution control, and the number and dollar amount of bonds subjected to referenda. There is poor correspondence between these

figures because bonds may be approved in one year and sold in a different year when the market is more favorable. In poor market years, the amount of bonds voted will be much larger than the amount of bonds sold. Furthermore, since the total bonded debt for water and sewer projects is increasing, this figure tends to overestimate the use of the use of the referenda as an approval mechanism. As a result, the percentage of the yearly debt incurred for pollution control that is approved by the electorate may appear to be more than 100%. The data for 1966 through 1969 are summarized in the table on the following page.

The number of bond issues subjected to referenda in a single year appears to be a more stable statistic than their dollar amount, and varies between 37% and 48%. The dollar amount of bonds subjected to referenda is much higher, with an average for four years of 77%. This difference suggests that larger bond issues are more likely than smaller ones to require approval of the electorate.

Number and Dollar Amount of Bonds Subjected to Referenda						
Year	Bonds Issued, Water and Sewer		Water and Sewer Bonds Subjected to Referenda			
	Number	Amount*	Number	%	Amount*	** %
1966	1,095	\$1,509	468	42	\$1,729	115
1967	1,209	1,843	469	38	678	37
1968	1,154	1,854	439	37	1,309	70
1969	828	1,175	389	48	1,178	100
TOTAL	4,286	\$6,381	1,765	41	\$4,894	77

*Millions of dollars.

**The percent can be greater than 100% because bonds may be voted on in one year and issued in a later year when the market is more favorable.

State Constitutions and Statutory Law. The second approach was to survey the State constitutions and statutory law for relevant referendum requirements. These surveys, presented in Appendix A, are summarized here.

State Constitutions & Referendum Law

No provision	31
Referendum exempted either in general or with respect to sewer bonds.	5
Referendum required only for general obligation bonds.	12
Referendum required for general obligation bonds and revenue bonds	2
Total	<u>50</u>

The significance of this data lies in its implications for changing State level referendum requirements. Although statutory provisions can be altered fairly easily, constitutional provisions are much more difficult to change. Only 14 states have constitutional requirements for bond referenda for water pollution control projects. This suggests that most states could change their laws rather easily if they so desired.

State statutes were also surveyed and tend to be more restrictive than the constitutions. Data were collected on the jurisdictions permitted to issue sewer bonds, the existence of referendum requirements, the types of bond possible, and the limit on the interest paid, if any.

The tables on the following page summarize the findings which can be found in detail in Appendix A.

Together, the constitutional and statutory data indicate that 44% of the states are free from all referendum requirements. Requirements, if any, appear in town county or authority charters. Seventy percent of the states provide for the issuing of some type of bond in some type of jurisdiction without referendum.

State Statutes: Referendum Requirements by Type of Bond	
Type of Bond	# of States
Allow general obligations only	-
Allow revenue bonds only	5
Allow both	45
Total	<u>50</u>

State Statutes: Referendum Requirements by Type of Jurisdiction	
Type of Jurisdiction	# of States
Allowed to forego referendum in at least one type of juris- diction	35
Never allowed to forego referendum	15
Total	<u>50</u>

Frequency of Referenda by State. The third approach was to examine the use of the referenda for water pollution control projects by state for 1966 through June, 1970. Frequency tables by state were compiled for each year and for the five year period from the listing prepared by the Investment Bankers Association from the Daily Bond Buyer. They can be found in Appendix A. The survey indicated that 41 states had at least one referendum during this time period. Ten states had at least twenty referenda and accounted for 79% of all referenda reported in the Daily Bond Buyer. These ten states are identified below.

State	Number of Referenda	Percent of Referenda in All States
Texas	469	39.0
California	96	7.9
Illinois	86	7.1
Oklahoma	83	6.8
Ohio	52	4.3
Michigan	43	3.5
Oregon	43	3.5
South Dakota	34	3.0
Louisiana	27	2.2
Virginia	23	1.9
Total	956	79.2

Application of the Findings to Bond Issues Not Subjected to Referenda

Despite the low proportion of bond referenda that fail, an analysis of the process can provide useful information about the "readiness" or "willingness"⁸ of local communities to undertake disruptive and expensive public improvements for water pollution control. When there is a bond election, the decision-making process of the local government is exposed to the interested observer. Interest groups are formed, issues are raised and openly debated, and the electorate makes a decision. The proportion of the total votes cast in favor of the issue can thus be considered a quantitative indicator of the willingness of the local community to invest in water pollution control.

In contrast, when there is no referendum, it is somewhat more difficult to identify the issues. Most of the debate will take place among government officials within the confines of their offices and council chambers. There will be no campaign, as such, since there is no need to persuade the electorate. Those with strong feelings about the project will voice their concerns to their elected representatives and lobby for their votes. In the last analysis, however, the fate of the project may be determined as much by the local political situation as by the merits of the proposed project.

Analysis of the referendum thus permits the interested observer to see more clearly what issues are of concern to the electorate and what factors may contribute to the defeat of a water pollution control project at the polls. Although the two processes differ, the substantive issues remain the same, and therefore the conclusions drawn from the referendum situation, cautiously applied, have a broader application to non-referendum situations as well.

CHAPTER II

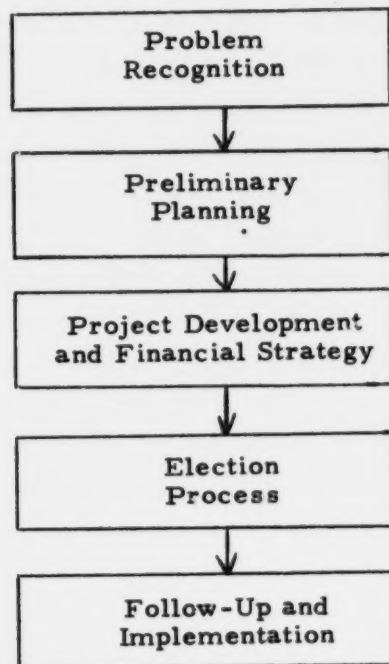
THE MUNICIPAL BOND ELECTION PROCESS

Introduction

As indicated in Chapter I, a major task of this study was to identify the factors which account for voter response to bond referenda for pollution control projects. Previous studies of this type have looked primarily at the characteristics of the electorate. One such study of the 1960 California water bond issue attempted to clarify the sociological and political correlates of a willingness to support the large public expenditure required to maintain an adequate water supply for Los Angeles County.⁹ The availability of election statistics by census tract made it possible to study systematically the relationships between voting behavior and a number of demographic characteristics, including age, education, race, home ownership, occupation and term of residence. This analysis was interpreted in the light of the issues and alignments of the campaign, the roles played by local governing bodies, water agencies, the media, political party organizations, special interest groups and other opinion leaders.

In order to develop policy-oriented recommendations for use by the EPA or local municipalities, the study team chose to examine the factors influencing the outcome of bond referenda more comprehensively. The community as a whole, rather than the electorate, census tracts or precincts became the unit of analysis. Thus, it was possible to draw conclusions from the study about the influence of technical aspects of the projects, their financial characteristics, and the management of the campaigns. All of these are policy-related factors which can be influenced by the EPA, the state water quality boards and the local jurisdiction.

A review of the process by which a water pollution control project is formulated and brought to a vote identified many actions taken by government officials and others which might affect the outcome of the vote. This process, briefly summarized below, thus became the major guide for identifying the data requirements of the study.



The Bond Referendum Process

The remainder of this chapter contains a description of each stage of this process and a list of the study variables associated with it. A detailed flow chart of the process can be found in Appendix B.

The Bond Referendum Process

Recognition of the Problem. A proposal to improve or provide a pollution control system undergoes a series of important considerations and influences before it may actually be presented to the voters in the form of a bond referendum. Most often, the process begins with a recognition on the part of the local government, concerned individuals or citizens' groups, or a state water quality board that a pollution or drainage problem exists and is creating a public hazard.

There are three major sources of such a pollution problem: it may arise from a recent period of rapid growth; from a prolonged period of steady growth which has gradually put pressure on existing public or private sewage disposal systems; or, in some cases from system deterioration. A drainage problem can also result from uncontrolled large scale development. However, it can also arise from a natural catastrophe, such as heavy rains and subsequent flooding. Drainage improvements benefit primarily those people whose property has been flooded, although these problems may also have broader implications for the environment.

Not all pollution control referenda result from identification of a deficiency in the current system. In some cases, groups within the community may feel that the town's growth potential is being stifled because it lacks sewers in some or all areas. These groups often consist largely of real estate owners or developers who stand to gain most from any large scale development project. The owners of large amounts of land with poor run-off characteristics may also bring pressure on the local government to initiate drainage improvements.

The variables associated with the problem recognition stage of the referendum process are listed below:

Geographic region

Investment Bankers Association use of proceeds code

Rate of population growth (1960-1970)

Use of the waterfront

Project aimed specifically at counteracting water pollution

Special topographical conditions contributing to the need for the project

Special topographical problems associated with the the construction of the project

Land development contributing to the need for the project

Future development contributing to the anticipated need for the project

Preliminary Planning. When faced with a pollution problem, the first decision made by the local government is whether to take direct action or to transfer responsibility to another authority. Where a special district has already been established to deal with a similar problem, the supply of water for example, it is often in the interests of local authorities to expand their function to include sewage disposal. Depending on the financial and legal constraints on the municipality, this approach may avoid unnecessary strain on their bonding capacity and open up a larger number of financial options.

If the municipality decides to take action itself, officials will begin to think about the kind of project that would solve the problem. Often a project has already been suggested, either by a private citizen or voluntary organization, such as a real estate developer or the Chamber of Commerce, or by a public agency such as a town planning office. If indeed a project has been outlined, it may be adopted outright or become the basis for evaluation of alternative solutions.

The study variables associated with the preliminary planning stage of the process are the following:

Governmental unit having jurisdiction
Existence of independent overlapping governmental units
Specific uses of the proceeds
Description of the project

Project Development and Financial Strategy. It is seldom the case that a local government is able to evaluate its pollution problem or determine what counter measures should be undertaken on the basis of the information immediately available. . . Frequently the problem will be referred to the town's engineer or a local consulting firm for further study. A report will be prepared, analyzing the problem and recommending the alternative solutions. The study may also suggest that a regional approach to the project would be more efficient, in which case the town may coordinate with neighboring communities.

A municipality may then conclude that it is in no position financially to undertake the project, that there are higher priority problems making demands on their resources, and decide to drop the issue. This conclusion is unlikely, however, if the problem is a serious one, or if there has been a significant amount of pressure put on the government by concerned citizens, other interest groups, or the state water quality board. On the other hand, if the benefits are clearly evident to the decision-makers, and the major obstacles are not technical, the decision-makers will proceed to consider the costs of the project and alternative financing schemes.

One of the most important issues considered when contemplating a major investment in pollution control is the means by which the project will be financed. There are a number of options available, including general tax revenue, municipal bonds, creation of a special district and Federal and State grants. Projects of this type are seldom financed out of the municipality's operating budget alone. This is due partly to their high cost, but also to the fact that the improvement is generally expected to benefit future

as well as present taxpayers. Typically the project will be financed through the sale of municipal bonds, with or without State and Federal grant assistance.

There are three types of municipal bonds which may be used for this purpose: the general obligation bond, the general mortgage bond and the revenue bond. Until recently, the most common form of financing pollution control facilities was the issuance of general obligation bonds, secured by ad valorem taxes. Since they are backed by the full faith and credit of the issuing authority, they are considered debt and therefore subject to constitutional, statutory and local charter debt limitations and to referendum requirements. There are a few exceptions to this. In ten states, debt limitation and referendum requirements have been removed from bond issues for sewage systems,¹⁰ and in three states, specifically New Mexico, South Dakota and Washington, general obligation bonds repaid from special assessment do not constitute debt. Appendix A summarizes State constitutional and statutory provisions regarding debt for pollution control projects.

The general mortgage bond pledges the taxing power of the jurisdiction and the physical facilities being built as collateral. It does not differ from the general obligation bond in terms of the referendum law.

A third kind of bond, which has been employed successfully to avoid debt limitations, and sometimes referendum requirements, is the revenue bond. The revenue bond pledges the revenue from specified sources (frequently user charges for the facility itself) to repayment. The issuing authority is not obligated to pay the bonds, but only to take no action which would cut off the source of revenue for the bonds, or restrict the ability of the bond trustee to collect and disburse the revenues. Revenue bonds do not, therefore, constitute debt for the issuing authority, except in the state of Idaho. No states prohibit revenue bonds, and five states permit only

revenue bonds for this type of financing. In about three quarters of the states, local governments have actually issued revenue bonds for financing water pollution control facilities.¹¹

Another approach to financing major public investments is the creation of a special district to provide limited services, such as sewage collection, treatment and disposal. Formation of a special district creates another political authority which is empowered to raise capital through the sale of revenue bonds unencumbered by the debt limitations of the one or more municipalities involved. In addition, the boundaries of the special district may be set to be contiguous with the pollution problem. This may be the case where only part of a town needs service, or where a regional approach appears to be the most reasonable one to take. Regional authorities work most efficiently in very high and very low density areas. The special district has its own governing body which usually operates in a state of relative autonomy. More than half of the states permit the formation of special districts for the purpose of sewage collection treatment and disposal.¹²

The Federal government has several programs to assist local municipalities in the construction of sewage treatment facilities. The Environmental Protection Agency authorizes grants for up to 30% of the eligible portion of the project, and up to 40% if the plan conforms with a comprehensive metropolitan development plan. In addition, the Department of Housing and Urban Development has several financial assistance programs for this purpose. One provides interest free advances to municipalities for planning purposes, including the payment of architectural and engineering fees. These advances must be repaid when the construction begins. In addition, HUD provides money under their 701 program for comprehensive urban planning which often includes sewer facilities. HUD will also make loans to small towns which are unable to obtain loans on reasonable terms from other sources. The Farmers Home Administration of the Department of Agriculture will make grants for up to 50% of the costs of a sewage collection and treatment facility to towns of not more than 5,500 in population

when the projects have been approved by the state water quality agency. The Economic Development Administration of the Department of Commerce has a similar program for areas designated as areas of substantial and persistent unemployment. In addition to the Federal funding available, there are also a variety of State and regional financial assistance programs.

After estimating the total cost of the project and assessing the availability of Federal financing, the municipality will decide on the amount of bonds to be issued and the means of repayment. It may also give some thought at this point to the bond market, and the prospect for selling its bonds when it is ready to do so. With this in mind, it will decide upon the amount of debt to be incurred and the type of bonds to be sold. Depending on the type of bond contemplated, the constitutional and statutory provisions of the state, and the local charter, a referendum may or may not be required. Thirteen states always require a referendum; 21 never require a referendum; 12 may require a referendum, depending on the circumstances. When the referendum can be avoided, most local governments will do so in the interests of not jeopardizing the project. However, it is not unusual for a municipality to hold a referendum, even though none may be required, either because they are not aware of alternative means of financing which do not require a referendum, or they wish to obtain an expression of priorities from the electorate.

The decision on the type of bonds to be issued marks the end of the project development and financial strategy stage of the municipal bonding process. The study variables associated with this stage are the following:

Dollar amount of issue
Consistency of population served and population paying
Total dollar cost of the project
Repayment of bonds by user charged
Repayment of bonds by increased taxes
Repayment of bonds by increased taxes until facility can be supported by user charge
Repayment of bonds by special assessment use of State grants
Use of Federal grants
Current tax rate (dollars per \$1,000 of assessed valuation)
Percentage increase (decrease) in tax rate increase from 1966 to 1970
Proportion of project costs repaid by increased taxes
Amount of project costs repaid by increased taxes
Proportion of project costs paid with State funds
Proportion of project costs paid with Federal funds
Total dollar indebtedness at beginning of 1970
Percent increase (decrease) in indebtedness between 1966 and 1970
Portion of operating budget spent for debt service
Existence of a debt limit
Source of the debt limit
Meaning of bond passage in terms of debt limit
Current jurisdiction credit rating
Rating system (Moody's or Standard and Poor's)
Federal regulations associated with the project
State or local regulations associated with the project

The Referendum Process. If the municipality decides to undertake the project itself, and a referendum is required or desired, the next step is to prepare the wording of the proposition. This may be an important

step, because the wording of the proposition can have an impact on the outcome of the election. If the wording is not clear, and the project is not described in sufficient detail on the ballot, then the voters may turn it down at the polls. On the other hand, if too much detail is given about a potentially controversial project, the voters may find fault with it.

A decision must also be made on whether the proposal is to be presented alone or in combination with other projects. This requires a preliminary assessment of the likely outcome of the issue. A popular project may help to carry less popular ones if they are offered in combination. On the other hand, unpopular projects may help defeat a pollution control project which might succeed if presented alone.

The municipality must also identify the electorate that will be voting on the bond issue. In some cases this will be all of the registered voters in the town. When only part of the population will be served by the improvement, officials may wish to declare only a portion of the electorate eligible to vote, as incongruities in the population voting, paying and being served can contribute to a referendum's defeat.

The timing of the election appears to have little effect on its outcome. However, if it is scheduled to coincide with an election of public officials, the turnout will ordinarily be much greater than if a special election is held. This can have a negative effect on the outcome of the election if the project is at all controversial. A large number of expensive proposals on the ballot, each requiring a separate vote, may force the voters to choose what they believe to be the highest priority projects, lest the community "spend too much money". This, too, could spell defeat for a sewer bond. These options must be weighed against the expense of holding a special election, which might in itself jeopardize the outcome. In one case studied, voters were angered by the local government when it chose to hold a costly special election when a school bond election was planned for nearly the same date.

The variables associated with the planning of the referendum are:

- Date of the election
- Population served same as different than population voting
- Type of election of local government (partisan/non-partisan; ward/at-large)
- Wording of the referendum
- Way the issue was offered to the voters (alone, combined, split)
- Other issues presented in the same proposition (if combined)
- Outcome for different issues on the same ballot (if split)
- Existence of candidates for public office elected in the same election
- Other issues presented for a vote in the same election but not combined
- Median family income (dollars)
- Proportion of families whose income is between \$3,000 and \$10,000 per year
- Proportion of families whose income is higher than \$10,000 per year
- Proportion of population of age between 21 and 35
- Proportion of population of age over 65
- Proportion of population non-white
- Proportion of population resident in the area in 1955
- Proportion of single family housing units
- Proportion of owner-occupied housing units

The variables associated with the referendum campaign are listed below:

- Existence of pressure groups for the issue
- Existence of pressure groups against the issue
- Importance of pressure groups for the issue (informants' judgement)
- Importance of pressure groups against the issue (informant's judgement)

Were the groups partisan in nature?

Expressed position relative to the project of community leaders, including:

Local officials

Doctors

Politicians and party organizations

State officials

Chamber of Commerce

Other local governing bodies

Ad hoc groups

Clergy

League of Women Voters

School and University Groups

PTA

Others

The Election Campaign. In the context of a bond referendum, the campaign refers to the process whereby actors interested in the outcome of the election attempt to influence the votes of citizens eligible to vote. In most cases, these actors will be important groups which have been organized for some other purpose but which have an interest in the outcome of the referendum. The organization which is most often active in bond election campaigns is the local government itself. The chief executive or legislative body, for example, may have proposed the sewer or drainage project and may therefore be its most important proponent. Other types of governmental units which may become involved are State or regional agencies concerned with the problems of drainage of water pollution.

There are also several private groups which may have a clear interest in the outcome of the bond election and be active in the campaign. The local Chamber of Commerce, for example, is usually concerned with

any issue which will affect the economic growth of the community and the tax rate--both of which are important to its business constituents. Another group which is often active is the League of Women Voters which, during the past few years, has made water pollution control one of its major concerns. Moreover, the League's general function is to inform the voters so that they can make intelligent decisions on election day. In this regard, it will attempt to provide information on the content of any bond issue being presented. In addition, there are other private groups which may become involved, especially conservationists, the clergy, members of the health profession, professional engineers, taxpayers' groups, and the PTA.

Finally, there may be ad hoc groups, established either to support or oppose the proposed bond issue. Many opposition groups are composed of angry taxpayers or citizens opposed to land development which "threatens the character of the community". Proponents of bond issues will often establish ad hoc organizations which may be "front groups" for other interested organizations. For example, the local government, which is legally not allowed to campaign for a bond issue it is presenting to the voters, may nevertheless provide assistance to a "citizens for better sewers committee".

A campaign will generally not begin until there has been a government decision to put the issue on the ballot, since this decision will define much of the subject matter for the campaign. However, political activity may begin much earlier, while the local government is still considering whether to put the issue on the ballot. At this stage the objective is to influence the way in which the issue will appear on the ballot, or whether it will appear at all. A campaign may begin even earlier than this, when someone in the community decides that he would like the local government to undertake a sewer or drainage project. He may immediately take his ideas to the public in an effort to create pressures on the city government to consider the project.

A campaign may take many forms, but always includes the use of some promotional materials or activities intended to persuade the voters. These may include face-to-face communication, newspaper ads and editorials, pamphlets, films, television, and so forth. A list of variables associated with the role and types of media investigated includes:

- Role played by newspapers during the campaign
- Role played by other media during the campaign
- Use of newspaper ads
- Use of radio and TV ads
- Use of telephone surveys
- Transportation offered to voters
- Advertisement mode: literature, brochures, leaflets
- Advertisement mode: Film
- Advertisement mode: Posters
- Advertisement mode: News stories
- Advertisement mode: Letters to the editor
- Advertisement mode: Speeches and meetings
- Advertisement mode: Door-to-door canvassing
- Availability of map to voters

The content of the actual information transmitted can also vary immensely. If, for example, there is no opposition to a bond issue, its proponents may simply announce that there will be a bond referendum and describe the project. On the other hand, if there is significant opposition, there probably will be a vigorous debate over the merits of the proposed project, the means of financing it, and so forth. Many different criticisms may be raised. Those which were included as variables in this study are:

- Cost and size of the project
- Taxes, fees and assessments
- Source of revenue to repay the bonds

Discrepancy in the allocation of benefits and costs
Timing of the construction
Location of the improvements
Need for the project
Opposition to community growth or change
Opposition to State or Federal interference
Management should be regional rather than local (or vice versa)
Distrust of local officials
Not enough information given by administration

The single most important aspect of the campaign is the level of campaign activity, the chief determinant of which seems to be the presence or absence of opposition. Where there is no opposition, the proponents of the bond issue have the option (which they often take) of maintaining a low level of campaign activity. If the proponents do any campaigning, it is normally focused on encouraging the voters who are likely to vote in favor of the bond issue to go to the polls. In cases where there is opposition, the level of campaign activity is usually higher, because there are more controversial issues to be debated. In some instances proponents of a bond issue generate a high level of campaign activity before there is any opposition and therefore any need to campaign at all. This often arouses an opposition group and leads them into damaging controversy. There are at least two reasons for this kind of behavior. Some proponents interviewed during the in-depth case studies believed that a high level of campaign activity was necessary for election success, while others were simply committed ideologically to the education of the electorate.

One other factor which may affect the level of campaign activity is the position of the press or other news media covering the campaign. It is possible for the media to create a campaign (or the impression of a campaign) even when the two sides of the issue do not want one; and conversely, an uncooperative media can stifle many attempts at campaigning by groups who favor or oppose the issue.

After the campaign, the issue is in the hands of the voters who will either approve or defeat it. The variables investigated in this study which are associated with the actual balloting and its results are:

- Percentage required to pass the issue
- Outcome (pass or fail)
- Outcome (percent of votes in favor)
- Outcome for the different issues on the ballot (if split)
- Percentage of the total number of issues on the ballot which received a significantly higher percentage of the favorable votes (5% or more) than the issue under study.
- Percent of the total number of issues on the ballot which received a lower percentage of the favorable votes (5% or more) than the issue studied
- Issue which received the highest vote
- Issue which received the lowest vote
- Percentage of the population registered
- Largest turnout for any purpose in that election

Follow-Up and Implementation. If the referendum passes, the issuing authority will probably seek expert advice on the sale of the bonds. If the market is favorable, it may sell them right away; if not, it may decide to delay. In a few cases, as when there is a change in the local government administration and policy, the bonds may never be sold at all.

If the voters defeat the bond issue, the proponents have several different alternatives. They may give up the fight for the project entirely, accepting the will of the voters, or they may attempt to pass the project anyway in the same or a different form. If they decide not to change their strategy, they will simply reschedule the election. On the other hand, they may use what they have learned from defeat to make some changes in the characteristics of the project, the bond issue, or the campaign. If the defeat has been a serious one, and they are committed to the project, they may choose to establish a special district and avoid another referendum. They may even change the character of the project by

adding or subtracting from the population that will be served. They may also try to develop regional interest in the project so as to have more flexibility in financing as well as a different electorate.

CHAPTER III

DATA COLLECTION AND ANALYSIS METHODOLOGY

Data Collection Methodology

Developing the Questionnaire. As indicated in Chapter II, there are a large number of factors at each stage of the municipal bonding process which can affect the passage or failure of a referendum. One hundred fifteen of these factors, listed in Chapter II, were isolated as the major variables to study.

Having identified a comprehensive list of variables which might be directly or indirectly related to the outcome of the vote, it was then necessary to identify the most knowledgeable local information sources and to formulate questions to collect data about those variables. It was obvious that at least the following people would have to be questioned: town clerk, controller or finance director, town planner, town engineer and a representative of the media. In cases in which there had been little campaigning and the information was not readily available from these sources, other members of the community were also interviewed.

Selecting the Sample. The sample was drawn from a listing of all of the municipal bond referenda published in the Daily Bond Buyer and compiled by the Investment Bankers' Association of America. This computer list includes about 75% of all the referenda held between January 1966 and June 1970 by cities, counties, townships, districts and statutory authorities to approve projects for the construction of sanitary sewers, storm and drainage projects, and treatment plants.

The IBA list indicated that during this period 1047 such referenda passed and 207 failed. Since a major purpose of the study was to compare the attributes of the referenda that failed with those that passed, an equal number was sampled from each of the two categories. Therefore, the

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initial population was stratified according to the pass-fail criterion. A systematic random sample was picked within each stratum, avoiding any bias inherent in the order of the list.¹³ The sample was not further stratified on the basis of social economic characteristics, because the purpose of the study was to identify what factors affect the success or failure of bond elections and not to focus particularly on the effects of socio-economic variables.

The time and budget available for the study made it possible to study 40 referenda, that is 20 that passed and 20 that failed. This represents a sampling rate of approximately 1/50 for those that passed and 1/10 for those that failed. This lists of these two sets of 20 referenda follows.

Statistical Analysis of the Quantitative Data

This section describes briefly the series of statistical analyses performed on the data collected and the kinds of conclusions that can be drawn from them. Some explanation of the potentials and limitations of the techniques is also included. Those readers who are not interested in the statistical methodology may prefer to skip to Chapter IV. Those who are familiar with statistical techniques will find further comments about them in Appendix C.

Frequency Distribution. When a sample has been selected, and a series of measurements have been made for some variable, then the data are ready to be organized and analysed. There are many kinds of analyses that could be performed and even more generalizations which might be made as a result. However, not all of this information is very useful. Therefore, it is important at the outset of the analysis to organize the data so that some general patterns emerge. Since the variables being investigated are classificatory, (that is, they can be measured in terms of a limited number of discrete categories or values), the number of cases which fell into each class was examined first. This is a frequency distribution, which is just an ordered rearrangement of the original data.

Sample of Referenda Which Failed

State	City	Year	Use of Proceeds*
(1) Georgia	Dekalb County	1970	28
(2) Minnesota	Mankato	1969	28
(3) Texas	Portland	1969	28
(4) California	Simi Valley Co. Sant Dist.	1969	21
(5) Alaska	Douglas	1968	21
(6) Illinois	Roselle	1968	28
(7) Ohio	Oakwood	1968	21
(8) Oklahoma	Oklahoma City	1968	28
(9) Texas	Round Rock	1968	21
(10) Texas	Brookshire Mun W. D.	1968	22
(11) Louisiana	Donaldsonville	1967	21
(12) Montana	Great Falls	1967	21
(13) Oklahoma	Cache Water and Sewer	1967	22
(14) Texas	Groves	1967	21
(15) Colorado	Hotchkiss Sewer	1967	21
(16) Louisiana	Morgan City Drain	1966	28
(17) Ohio	Avon Sewer	1966	21
(18) Oklahoma	Moore Sanitation	1966	21
(19) Texas	Cuero Water and Sewer	1966	22
(20) California	Los Angeles Co. Sewer	1966	21

* 21 = Water and Sewer

22 = Sewer

28 = Storm Sewer or Drainage

Sample of Referenda Which Passed

State	City	Year	Use of Proceeds*
(1) Texas	Columbus	1970	21
(2) Texas	Harris Co. Water Dist. #73	1970	22
(3) Texas	Rockport	1969	28
(4) Massachusetts	Athol	1969	21
(5) South Dakota	Batesland	1969	22
(6) Texas	Harris Co. Water Dist. #10	1969	22
(7) California	Palo Alto	1968	21
(8) Michigan	Warren	1968	21
(9) Oregon	Bend	1968	21
(10) Texas	Kyle	1968	21
(11) Wyoming	Jackson	1968	21
(12) California	Mill Valley	1967	21
(13) Missouri	Rolla	1967	28
(14) Texas	Alvin	1967	22
(15) Texas	Royse City	1967	21
(16) Louisiana	Jefferson Parris Consol. Drainage District	1967	28
(17) California	Petaluma	1966	21
(18) North Carolina	Brevard Sewer District	1966	21
(19) Texas	Belton Drainage District	1966	28
(20) Texas	Van Alstyne	1966	22

* 21 = Water and Sewer

22 = Sewer

28 = Storm Sewer or Drainage

For example, the frequency distribution of the amount of the issue indicates that 72.5% of all issues are quite small, that is less than one million dollars. A comparison of this information with the distribution of another variable, the total cost of the project, shows that only 61% of the projects cost less than one million dollars. This discrepancy suggests the use of other forms of financing--for example, State and Federal grants. However, both figures corroborate the fact that there are a great many referenda for rather small projects.

Another application of this descriptive statistic is the frequency distribution of referenda by geographical region. Sixty-seven percent of the referenda were held in the West and Southwest, while only 18% were held in the Midwest, 13% in the South, and 2% in the Northeast. This picture is consistent with the previous analysis of the statutory and constitutional provisions concerning the requirements for bond referenda.

Cross-Tabulations. The relationship between each variable and the outcome of the referenda was examined next. One of the most commonly used techniques for studying the relationship between variables is the cross-tabulation. The cross-tabulation, or contingency table is a tabular presentation of percentages and frequency distributions of cases according to two classificatory variables. The principal use of this analysis was in displaying the relationship between each variable and the outcome of the referenda.

The relationship between each pair of variables was analysed statistically by various tests of significance to determine the probability that the observed distribution could have occurred by chance. The strength of the relationship was also tested by means of another series of statistical measures. A detailed discussion of both the tests of significance and the measures of association is presented in Appendix C.

The potential of cross-tabulation tables can be illustrated with an example from this research. Consider, for example, the contingency table below which summarizes the relationship between the outcome of the referenda and whether or not the bond is to be repaid by increased taxes.

Outcome	Repaid by Increased Taxes	Not Repaid by Increased Taxes	Total
Passed	6	14	20
Failed	13	7	20
Total	19	21	40

The table reveals that there are clear differences in the outcomes of the referenda depending on whether or not the bonds are to be repaid by increased taxes. This suggests a strong relationship between the two variables. Projects not repaid by increased taxes are more than twice as likely to pass as those which are. The table also shows that this phenomenon is not always considered when the strategy for repaying the bond is being formulated. Of the 40 referenda, close to half proposed repaying the bonds by increased taxes.

It is often useful to compare two contingency tables to get a better picture of the relationship between two variables that are both related to outcome. The example below shows that projects which are not repaid by user charges are three times as likely to fail as those which are. A comparison of the two tables discloses that these two means of repayment have opposite but nearly equivalent impacts on the outcome.

The two tables display clearly the preferences of the voters. The results of the other contingency tables were generally less dramatic, and the question arose as to whether the observed differences are statistically significant. This question has been answered by means of the tests of

Outcome	Repaid by User's Charges	Not Repaid by User's Charges	Total
Passed	11	9	20
Failed	5	15	20
Total	16	24	40

significance cited above and discussed in Appendix C. These tests determine whether discrepancies in percentages are due solely to sampling errors or reflect statistically significant relationships.

Calculation and interpretation of the tests for all the cross-tabulations between the 114 variables identified and the results of the bond elections identified 34 independent variables associated with success or failure in something other than a random pattern. This suggested that some, or even all, of these variables might explain the variance in outcome of the bond referenda. The identification of these variables led to the next phase of analysis.

Linear Correlation Analysis. Linear correlation analysis has been used in this research to provide a single summary statistic describing the strength of association between all pairs of variables, whereas cross-tabulation was used only to relate the outcome to all the other variables. Like two-way cross-tabulation tables, correlation coefficients enable the specification of the relationship between two variables. In cross-tabulation the degree of association is obtained by examining the frequencies of the two variables in tabular form. In correlation analysis the strength of association is indicated by a single summary statistic: the coefficient. However, correlation analysis can be applied only to variables which are dichotomous, or at least ordinal in scale, as explained in Appendix C. Therefore, the correlation coefficients were determined only for the 89 initial quantitative variables and the 10 new variables described in Appendix C. These 99 variables summarize most of the relevant information collected, since many variables are somewhat redundant with the nominal variables.

Besides its use in identifying relationships between variables and describing their direction and strength, linear correlation analysis was also used to identify indirect relationships and develop links between them. For example, there is a significant relationship between population growth and the number of groups active in the campaign (+.47) and between this later variable and the outcome of the election (-.28). This type of analysis points out that the initial characteristics are not independent variables, and that even if two variables are not directly related, they can very well be connected through a series of intervening variables. Correlation analysis has been applied in this way, where relevant in the interpretation of the data presented in the following chapter.

Several sets of correlation coefficients were calculated: the Pearson's product-moment correlations for the data that are interval in scale, Kendall's rank-order correlation coefficients for the ordinal variables, and point-biserial and tetrachoric coefficients for dichotomous data. While the computational procedures for these types of correlation differ, they all have a common and intuitive representation through the scatter diagram. In this diagram, assume that the vertical axis represents the outcome of the referenda in terms of percent of favorable votes, while the horizontal axes represent respectively, in diagram

- (1) the percent of present population already resident in the community in 1955 (variable 104),
- (2) the index of coincidence of those who voted, pay and are served (variable 117), and
- (3) the number of criticisms types raised (variable 119).

A referendum is represented by a dot on these diagrams at the intersection of the values recorded for it on the two variables, and the interpretation of these diagrams is straightforward. In diagram 1, there is little or no relationship between the two variables. The dots are randomly distributed and the correlation coefficient for these two variables approaches zero (+0.003). Scatter diagram 2 reveals a weak positive



relationship in which increase in either one of the variables is mildly associated with an increase of the other. In that case, the correlation coefficient is positive and small in quantity (0.189). Finally, the relationship revealed by diagram 3 is strong and negative: the coefficient is negative and large (-0.52).

Linear Regression Analysis. The linear correlation analysis and the cross-tabulations identified a large number of characteristics of the referenda which were highly correlated with outcome, but not highly correlated with one another, that is, independent of one another. Factor analysis was also used to identify the combinations of these independent forces underlying the outcome of the referenda. In fact, as explained at the end of Appendix C, factor analysis was carried out as an intermediate step in an attempt to derive clusters of referenda discriminated by the pass-fail criterion. However, the additional information resulting from these two techniques was not used to derive conclusions for the reasons explained in Appendix C. On the basis of this information, the analysis proceeded to the development of a linear regression model.

The linear regression analysis had two major purposes. The most important of these was to understand better the relationship between each independent variable retained for this analysis and the outcome of the referenda. This understanding could be gained by examining the sign and size of the coefficients of the equation. These coefficients reflect

the strength as well as the direction of the relationship between a dependent variable and the independent variable.

The second purpose of the linear regression was to develop a model capable of predicting the outcome of a referendum, in terms of the percentage of votes in favor. This was achieved by means of a linear combination of the values of those known characteristics which together correlate as highly as possible with the outcome.

A more powerful variation of multiple regression analysis, namely stepwise multiple regression was used. It provides a means of choosing those independent variables which will predict best with the fewest independent variables. This method constructs a prediction equation using one independent variable at a time. The first step is to choose the single variable which is the best predictor of outcome. The next variable added is the one which provides the best prediction in conjunction with the first variable. This process continues until no additional variables can make a statistically significant contribution to the predicting of the variance in the outcome.

Single and multiple regression used in conjunction with assumptions about the time sequencing of the independent variables allowed us to analyze some chains of inter-relationships which can be considered "causal". However, such causal chains are really only cascades of inter-relationships between variables. The cause and effect relationships are not provided by the analysis, but derived either from obvious time precedence or from assumptions introduced by the analysts about which variables among those retained have a prior effect on the dependent variable.

CHAPTER IV

FACTORS AFFECTING THE OUTCOME OF THE REFERENDA

Introduction

As explained in the previous chapter, the regression analysis has identified the minimal set of referendum characteristics that explains a satisfactory proportion of the variance in the outcome of the election. Sixty-two percent of the variance is accounted for by the following study variables:

035	Existence of pressure groups against the issue
078	Bonds repaid by increased taxes
109	Project aimed at counteracting a water pollution problem
119	Number of criticisms raised
098	Proportion of families with incomes of less than \$3,000 per year
037	Groups partisan or not
077	Bonds repaid by user charges
015	Rate of population growth, 1960-1970
097	Median family income
002	Dollar amount of bond issue
083	Current tax rate

A list of variables, however, even in a regression equation, tells little about the dynamics of a bond election and the role of the independent variables in determining its outcome. Therefore, the direct relation between each of these variables and the outcome of the election will be discussed prior to the interpretation of the regression analysis. This discussion will incorporate examples from the in-depth field studies and

telephone surveys. However, these examples are only illustrative and should not mislead the reader into thinking that the conclusions have been drawn from only a few observations.

In addition to the variables included in the regression analysis, there are also several others which were hypothesized at the outset of the study to have significant influence on the outcome of the referendum. Although they did not emerge as significant in the analysis, they will also be discussed, since they are generally expected to have an important impact.

The independent variables have been grouped into four categories: population characteristics; community characteristics; characteristics of the bond issue; and campaign characteristics. Population characteristics are basic socio-economic data which provide a profile of the citizens in the communities that were studied. Some examples are percent of the population over 65 years of age, percent with incomes under \$3,000 per year and percent non-white. Community characteristics, on the other hand, describe the community as a whole, for example, the tax rate. The variables which are characteristics of the bond issue are those which describe the issue, eg, the amount and the manner in which it was presented to the voters, (either as a split issue, singly, or in combination with other issues). The campaign characteristics describe the political process which precedes the vote on the bond--the number of criticisms raised, for example.

Population Characteristics

Population characteristics are basic socio-economic data such as age, education, income, race and the like which describe the residents of the communities that were studied. These characteristics are generally assumed to be important correlates of voting behavior; in addition, they can be obtained easily and inexpensively from census data and town planning studies. For these reasons, several population characteristics were included as variables in this study.

Surprisingly, the statistical analyses showed that only two of these variables were directly or indirectly related to the outcome of the bond election: percentage of families with incomes less than \$3,000 (variable 98), and the median income of the population, (variable 97). Of these two, the percentage of families with incomes less than \$3,000 is the more significant, although its correlation with outcome is only +.23. As the table below suggests, bond elections for pollution control projects are more likely to be successful in communities with a high percentage of families with incomes of less than \$3,000.

Election Outcome	Percent of families with incomes less than \$3,000		
	0-19%	20+%	Total
Passed	12	8	20
Failed	17	3	20
Total	29	11	40

This relationship must be interpreted carefully. It may be that the data indicate that poor people vote in favor of pollution control bonds-- perhaps because they expect to benefit from the project without having to pay for it. This interpretation would be consistent with other political analyses of voting behavior in referenda.¹⁴ It would also be consistent with the assumptions of political leaders interviewed during the in-depth

field studies who felt that they could "count on the poor wards" to vote in favor of the bonds.¹⁵ In spite of the apparent plausibility of this interpretation, this study's data do not provide sufficient evidence to warrant this conclusion without further analysis. There are other explanations which are equally plausible. For example, it may be that communities with a higher percentage of poor persons have traditionally been unable (or unwilling) to maintain a high level of public services. If these were so, the need for sewer and drainage improvements in these communities might be more critical, and the urgency of the need, rather than the percentage of poor persons, would contribute to the number of votes in favor of bonds for such improvements.

All that can safely be said in interpreting this relationship is that there is a positive correlation between communities with a high percentage of families with incomes of less than \$3,000 and affirmative votes in bond elections. As such, this variable is a predictor (albeit weak) of bond election outcomes. These data do not mean that individual families with incomes of less than \$3,000 vote in favor of bond issues. This kind of interpretation falls in the category of "ecological correlations."¹⁶ Making inferences about individual behavior from aggregate data are of questionable validity.

The other population characteristic which appears in the final regression equation (variable 97, median income) has a weak direct correlation with outcome: -.05. If there is any direct relationship between median income and the outcome of the election, this low correlation may suggest that the relationship is not linear.

Election Outcome	Median Income					Total
	< 4000	4000	5000	6000	7000+	
Pass	8	2	2	4	4	20
Fail	8	2	0	3	7	20
Total	16	4	2	7	15	40

The lack of a strong direct correlation with election outcome does not, of course, eliminate a variable for the regression. It may be that there is a relationship between median income and some other variable, (or combination of variables) which are, in turn, related to the outcome of the election. Median income apparently plays a role in a linear combination of variables which together account for a substantial amount of the variance in the dependent variable.

None of the other population characteristics emerged as significant determinants of the outcome of the bond election. One possible explanation is that the unit of analysis for this study was the community, whereas the relationship between socio-economic characteristics and voting behavior has generally been observed for the behavior of voters as individuals, or as carefully delineated groups. While socio-economic characteristics may have substantial influence on individual voting behavior, it would be erroneous to assume that they should have the same effect on collective behavior. This kind of interpretation runs into the problem of "aggregation effects:" the interpretation of data at one level of aggregation when it was actually collected and analysed at another.¹⁷

Another possible explanation for the fact that few socio-economic variables were related to election outcome may result from the fact that there was little variance in several of the socio-economic variables. The communities used in this survey were selected by sampling randomly from a list of communities whose bonds had passed and a list of those whose had failed. The resulting sample varied little in terms of socio-economic characteristics: many were small towns or suburbs, populated predominantly by white homeowners. In order to determine the impact of homeownership or race on the outcome of the vote, it would have been necessary to stratify the sample according to these characteristics or study the voting behavior of small, homogeneous groups within the community.

Community Characteristics

There are three variables which are characteristics of the community as a whole which appeared in the regression equation: variable 109, whether or not the proposed project intended to solve a present or future pollution problem; variable 15, the rate of population growth from 1960 to 1970; and variable 83, the current tax rate. Each of these is discussed below.

Existence of a pollution problem. Most of the communities studied reported that their proposed projects were intended to solve a present or future pollution problem, as illustrated by the following table. A pollution problem, by definition, affects everyone in the community because of the possibility of drinking water contamination and other health hazards. Recent intensified concern for environmental quality has drawn attention to these hazards, as well as to a resulting decline in the attractiveness of the environment. A town's ability to capitalize on this concern greatly increased the likelihood that its bonds would be approved. A few examples from the case studies should help to illustrate this point.

Outcome	Present or Future Pollution Problem No	Present or Future Pollution Problem Yes	Total
Passed	1	19	20
Failed	4	16	20
Total	5	35	40

Although there are only five cases in which there was not reported pollution problems, it is interesting to note that 80% of them failed. In contrast, the association of the project with a pollution problem does not necessarily command success; it results in failure almost as often. This suggests that the presence of a pollution problem may be a necessary but insufficient condition for election success.

In Brevard, North Carolina, for example, a water pollution problem was threatening the tourist business on which a major part of the town's economy depends. The seriousness of this problem was the major issue in the campaign for bonds to finance major sewer improvements, and the bond issue passed easily.

In contrast, in those cases where there is no clearly identified pollution problem, the bond issues had a more difficult time passing. For example, in DeKalb County, Georgia, the voters rejected a drainage bond issue in part because drainage was simply not a problem for the vast majority of residents. At the same time, the same voters approved by a substantial margin, a new solid waste disposal facility to end a solid waste problem which was clearly a pollution problem affecting the whole county. This suggests that the voters were in favor of reducing pollution, but were not in favor of incurring a debt to construct improvements which would assist relatively few people in the community.

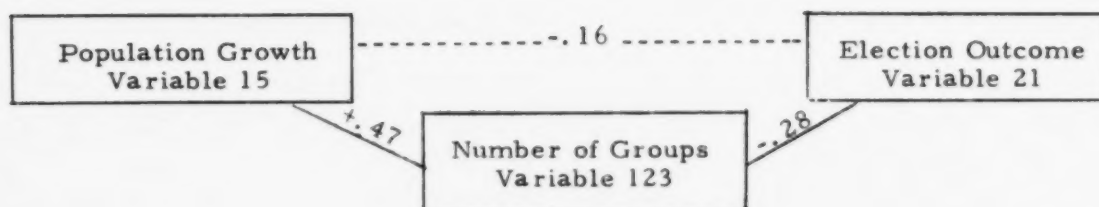
Even where a pollution problem clearly exists, however, the local residents may be unwilling to support a bond issue. For example, Avon, Ohio had been declared a major polluter by the Ohio Water Pollution Control Board who had even imposed a building ban on the community. Many of the residents in the community responded that the OWPCB "had something against Avon" or were "in cahoots with the land developers who want to build sewers," and defeated the issue. Similarly, in Malibu, California, the pollution of the beach was a clear and serious problem, but the residents were unwilling to approve a bond issue for sewer improvements because they felt that the pollution problem was also the responsibility of non-residents who enjoyed the beach.

Population Growth. One of the assumptions underlying the model of the municipal bonding process is that population growth contributes to a pollution problem, which in turn is associated with the approval of

municipal bonds for pollution control projects. However, statistical analysis suggests that the relationship between population growth and the outcome of the election may be somewhat different. The correlation coefficient between variable 15 (population growth) and 109 (existence of a pollution problem) is only .07. Furthermore, the correlation coefficient between population growth and the outcome of the election is $-.16$: population growth is associated with election defeat, not success.

This suggests that population growth has other effects on the community, and that some of these are important determinants of the outcome of the election. For example, population growth may bring new groups into the community with values and ideas which are different from those held by the older residents. Many of the communities in this survey are small towns or old towns now becoming suburban communities for a larger city. Previous studies have shown that differences between older resident groups and "newcomers" are one of the major social divisions in rapidly growing communities.¹⁸ Thus, one possible interpretation of these data is that population growth contributes to political instability which increases the likelihood of disagreement over the proposal of a bond issue. Some evidence in support of this interpretation is provided by the fact that population growth is highly correlated with the number of groups participating in the bond election campaign, and the number of groups is negatively correlated with bond passage. The relationship between population growth and outcome might be described by means of an intervening variable, as shown in the causal diagram on the following page.

Tax Rate. Like population growth, the tax rate (variable 83) is negatively correlated with bond passage. Therefore, it appears that citizens in communities with high tax rates are less likely to support bond issues than citizens in communities with low tax rates. This is presumably because



they are less willing to undertake major new public improvements which involve the potential for even higher tax rates in the future.

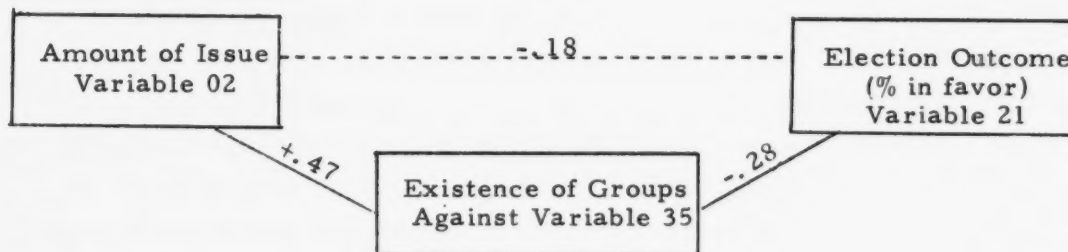
Some caution should be exercised in interpreting these data, however. The relationship between tax rate and election outcome is not very strong, and there are some problems involved in the interpretation of a variable like the tax rate. First, it is not unreasonable to expect that there may be communities with high tax rates whose citizens prefer high levels of public service. In such communities, one might reasonably predict that bond issues for sewer and drainage improvements would have a good chance of success. Second, the means of measuring and collecting data on tax rates varies from community to community, except in those few states where such data have been standardized. In spite of attempts to keep these data as uniform as possible, complete consistency was not possible. This reduces somewhat the utility of such a variable as a predictor of election outcome. Evidence from the in-depth case studies suggests that it may be a recent increase in the tax rate that has a strong negative effect on the election outcome, rather than the absolute rate.

Issue Characteristics

It is clear from the previous discussion that the population characteristics and community characteristics alone are poor predictors of bond election outcome. The most important determinants of election outcome identified by this study are the characteristics of the issue itself, and the politics of the campaign which precedes the bond election. The issue characteristics which were considered as possible determinants of outcome are the amount of the issue, Federal or State financial assistance to the project, the proposed means of repayment, and the presentation of the issue on the ballot.

Amount of issue. The amount of the bond issue, (variable 2) is negatively correlated with outcome: as the amount of the issue increases, the likelihood of its being passed by the voters decreases. The direct correlation

between the amount of the issue and election outcome, however, is rather small ($-.18$). On the other hand, the amount of the issue is significantly correlated with the existence of groups against the bond issue (variable 35) which, in turn, is associated with bond failure. This suggests that the amount of issue may be important because it stimulates controversy. This is consistent with our analysis of the campaign which demonstrated that criticisms regarding the costs of the proposed project accounted for a significant number of the criticisms raised during the campaign. Thus, the relationship between the amount of issue and outcome could be expressed by the following model, where the existence of groups against the bond issue is an intervening variable between the amount of the issue and the outcome of the election.



Federal and State financial assistance. One of the issue characteristics which was expected at the outset of the study to be significant was the effect of Federal and State support of the project on the outcome of the bond election. One might hypothesize, since the amount of the issue had a negative correlation with election outcome, that anything which would contribute to a decrease in the amount of the issue (eg, Federal or State funds) would also contribute to the probability of election success. The statistical analysis indicates that the relationships between Federal and State contributions (variables 87 and 88) are not significant. In the case of State contributions, for example, the number of cases is simply too small to be significant. Although the number of cases of Federal support is larger, the correlation is only slightly positive, $+.04$. Moreover, Federal contribution is not significantly correlated with any other variables which might give some idea of its place in the total election process. All that can be concluded is that any definitive statements about the effectiveness of Federal and State funding as an incentive for raising local capital for pollution control must be based on a study of a larger number of local governments with this experience.

Method of repayment. Two variables measure the method of repayment; variable 77, repayment by user charges; and variable 78, repayment by increased taxes. An analysis of the relationship between these two variables and election outcome shows that the method of repayment has one of the clearest and most significant relationships.

If user charges are proposed as the means of repayment, it is more likely that the issue will pass, as the table below indicates:

Means of Repayment			
Election Outcome	User Charge Not Proposed	User Charge Proposed	Total
Pass	6	14	20
Fail	13	7	20
Total	19	21	40

If a tax is proposed to repay the bonds, then there is a greater likelihood that the issue will fail.

Means of Repayment			
Election Outcome	Tax Not Proposed	Tax Proposed	Total
Pass	11	9	20
Fail	5	15	20
Total	16	24	40

There are two ways of interpreting the voters' reaction to these means of repaying bonds. The simplest interpretation suggests that voters generally wish to avoid tax increases and therefore prefer the user charge which does not involve a tax increase. In many of the jurisdictions studied in this survey, the tax issue was important, and community

taxpayers organizations were major actors in some of the election campaigns, often leading the opposition. For example, in Roselle, Illinois, a taxpayers' organization was revitalized specifically to fight the drainage and storm sewer bond issue and was successful in defeating it. Similarly, in Great Falls, Montana, the Taxpayers' League was a major opponent of the bond issue.

A second reason why voters prefer user charges to increased taxes has to do with the notion of equity: those who benefit from the improvement should be the same as those who pay. If the local government is proposing to build sewers for only part of the town, (the argument runs) then only that part of town should pay. This argument is not valid in cases where part of the town which is not going to benefit directly from this project is expected to benefit from future projects that represent comparable levels of investment.

In Round Rock, Texas, for example, the government has proposed a bond issue to finance improvements and extension of the sanitary sewer collection system; these charges were to take place only in a wealthy (and predominantly white) part of the city. Non-white residents were not willing to support an increase in taxes to repay general obligation bonds for projects from which they would not benefit.

Unfortunately, sewer and drainage improvements are particularly vulnerable to this charge--they often serve only part of the community at the expense of the whole. An extension of sewer lines serves only that part of the city where these new lines will go. Drainage improvements serve only the persons who reside in the immediate area where these improvements are constructed. The data indicate that a more popular solution to the problem is to repay the bonds with user charges, thereby allocating the costs of the project solely to those who benefit directly.

Campaign Characteristics

A number of different variables can characterize the campaign preceding a bond election. The study gathered data on the number and types of interest groups active in the campaign; the types of activities engaged in; the types of advertising or other promotional materials used and their cost; the role of the media in the campaign; and the types of issues raised during the campaign by both the proponents and opponents of the bond issue.

Existence of opposition groups. Variable 35, the existence of groups opposed to the bond issue, emerged clearly in the statistical analysis as the most important election characteristic. The data show that in communities where opposition groups were present, the bond issue was much more likely to fail; in communities where there was no organized opposition, the issue was likely to pass. The relationship between this variable and election outcome is illustrated in the following table:

Election Outcome	Existence of Opposition Groups		Total
	Non-Existence	Existence	
Pass	18	2	20
Fail	4	16	20
Total	22	18	40

It is evident from the data that this is the most significant relationship between a single independent variable and the outcome of the election. In only two cases in which there were pressure groups organized against the bond issue were the proponents able to prevail. The results of the regression analysis further support this observation; this variable accounts for 41% of the variance in the outcome, even when combined with other variables.

The apparent success of opposition groups in ensuring the defeat of bonds points to one of the most striking aspects of bond elections. A campaign against a bond, even one which is poorly organized, poorly financed or poorly reasoned can have a significant impact on the outcome of the election. The reason for this seems to be the ease with which one can create doubt in the minds of the voters. As Crain, Katz and Rosenthal point out in their study of water fluoridation referenda,¹⁹ one of the most successful arguments against fluoridation was that very few of the citizens who voted against the fluoridation referenda actually believed that fluoride was poison; but they were not completely sure that it wasn't either.

Once an opposition group has begun to make charges about a proposed bond issue, the proponents face some difficult strategic decisions. They can either ignore the criticisms, respond to them, or attempt to discredit the opposition on some other grounds. Any of these approaches can have negative consequences for the proponents.

One of the most common responses by proponents to criticism by groups opposed to the bond issue is to increase the level and intensity of their campaign, on the assumption that they can win if they just try harder. Study data suggest that this may not be the case. As the following table indicates, no matter what the level of campaign effort, the bond issue is likely to fail when there is opposition.

The reasoning behind this phenomenon is complex. Once opposition has been voiced and the proponents have responded, the level of campaign activity begins to escalate. More and more controversial issues are raised, sparking the involvement of more special interest groups and ultimately involving more people in the campaign. In the face of all this controversy, the voter is forced to make a decision.

The construction of a pollution control facility involves complex questions of engineering, municipal finance, tax policy and so forth. Even the best

Presentation of the issue on the ballot. The bond issue may be presented on the ballot as a single issue; it may be combined with other bond issues on the ballot; or it may be divided into several parts, each of which must be voted on separately. Some local officials have strategic reasons for choosing a particular method for presenting the issue on the ballot. For example, if a bond for sewer or drainage improvements is unpopular, it may be combined with other bond issues which are more popular in the hopes that the more popular issues will help it to pass. If it is a large bond issue, it may be split into several parts so that the voters have an opportunity to consider each part separately and approve the parts they feel are most important.

At the outset of this study, it was hypothesized that the way in which the issue was presented would make a difference in the outcome of the elections. Indeed, the data show a small correlation between these variables and the outcome: variable 121, the combination of the issue with other bond issues on the same ballot, had a weak (+.14) positive correlation with passage. Variable 122, the splitting of the issue on the ballot, had a slightly stronger, but negative, correlation (-.22). These variables do not appear in our final regression equation because the number of cases of each variable is too small. There are only six instances of a combined issue, and five instances of a split issue. In order to study systematically the effects of presentation on the ballot on outcome, a sample of jurisdictions should be chosen which would represent each of these types equally.

Consequences of Campaign Activity			
Opposition	Level of Proponent Activity*	Number of Cases	Election Outcome
Yes	Low	4	0 Pass 4 Fail
	Medium	8	1 Pass 7 Fail
	High	5	1 Pass 7 Fail
No	Low	11	10 Pass 1 Fail
	Medium	3	3 Pass 0 Fail
	High	6	5 Pass 1 Fail
*Some groups endorsed the issue; others contributed funds to finance a campaign effort; some published leaflets, printed posters, or sponsored newspaper advertisements; some made speeches or appeared in public debates; others went door-to-door soliciting votes; etc. If a group merely did one of these things, its level of activity was rated as "low". If a group performed two or three of these activities, its level was rated "medium". If a group did more than three, its level was rated "high".			

educated and informed voters cannot fully understand all of the important questions contained in that decision. Thus, voters look for advice on how to vote: they look to a person or an institution they respect--someone they think does understand the issues.

This advice-seeking process takes place in partisan elections for public office as well. Although the voter may not understand all of the issues at stake in a presidential election, he does know which of the candidates

seems to stand for the policy views he advocates. If this is not clear, he will probably look to the political party which has traditionally espoused his views for a cue to the way he should vote.

In bond elections, the simple choice between parties is not available. One cannot simply vote a straight party ticket; one must actually decide on public policy. As a result, some unique voting phenomenon occur. Some voters will cast their votes for either the negative or positive option, regardless of the content of the item, because they are what has been described as "yeasayers" or "naysayers".²⁰ Others who have certain grievances or hostilities toward the political order, ie, the "alienated voter", will vote against anything that is proposed.²¹

In spite of the scholarly interest in these phenomena, they account for only a small fraction of the total vote.²² Most voters are simply trying to make a difficult decision on the basis of inadequate and conflicting information. Without a political party to offer a cue, they look to the news media or to influential citizens, (eg, the mayor, councilman, selectmen, Chamber of Commerce, League of Women Voters) for advice on how to vote. When the advice of respected community leaders is inconsistent and the information they give out is contradictory, the voter becomes even more confused. Rather than vote to spend money for a project for which the benefits are perceived to be uncertain, the doubtful voter will vote against the bond issue.

Analysis of the survey data collected during this study also shows that organized opposition is particularly effective when it is led either by an elected official or someone else who is respected in the community. Opposition by someone "who ought to know all the facts" is taken by the voters to mean that there must be something wrong with the bond issue. In those eight cases where there was opposition and a medium level of campaign activity, there was one case where some local officials were campaigning in favor of the bond and some against. In the five cases

where there was opposition and a high level of campaign activity, there were three cases of local officials campaigning on both sides of the issues. All of these cases resulted in election defeats. In many of the in-depth case studies where bond issues had been defeated--Avon, Ohio; DeKalb County, Georgia; and Round Rock, Texas; for example--the respondents pointed to the "lack of a united front by elected officials" as one of the major contributing factors to the defeat of the bond election.

The town of Avon, Ohio is a good example of the power of opposition groups in defeating a proposed bond issue. Sewers were first proposed to the voters in 1963. Since that time, there have been six more elections, and each time the proposal has failed. The reason for failure cited by most of the respondents in Avon was that the majority of the residents simply did not want sewers because they opposed the land development which they felt would be a natural consequence of sewer construction. Despite substantial opposition, the proponents continued to try to convince the voters of the sewer's benefits. In 1968, for example, the Ohio Water Pollution Control Board placed a building freeze on the city which would be lifted only when the bond issue was passed and the sewers constructed. This pressure was resented by the opponents who then tried to discredit the proponents. They claimed that the OWPCB had "singled out" Avon rather than concentrating on the more important polluters of Lake Erie, like Cleveland. They also argued that the OWPCB was in collusion with the land developers and other groups who stood to gain financially from the sewer construction.

Several respondents felt that another important reason for the proposal's repeated failure was the lack of a "united front" on the part of community leaders. In each referendum there was some elected official, either the mayor or some member of the council, who opposed the sewers. This legitimized the opposition of many undecided residents whose doubts about the worth of the project were confirmed. In summary, the active opposition and the decision of community leadership has contributed substantially to the defeat of seven sewer proposals in Avon.

Role of community leaders. In addition to local government officials, the only other groups which were at least moderately active in the campaigns studied were the State government, the local Chamber of Commerce, the local League of Women Voters, and ad hoc groups which emerged as a result of the bond proposal. Except for the ad hoc groups all were in favor of the bond issue in their communities on the other hand, ad hoc groups were typically taxpayers organizations which had been formed with the specific purpose of fighting the bond issue.

These groups varied in the level of effort they contributed to the campaign. The State governments and League of Women Voters rarely contributed more than a low level of campaign effort. This was because the State government was concerned that its campaign efforts might be interpreted as outside interference in local affairs and the League of Women Voters is typically interested only in educating the voters. The Chamber of Commerce and the ad hoc groups, on the other hand, were much more active in the campaign, as the following table indicates.

Group	Level of Effort		
	Low	Medium	High
State Government	11	1	-
Chamber of Commerce	7	6	9
<u>Ad Hoc</u> Groups	2	6	2
League of Women Voters	8	1	-

The most interesting data on these four organizations concern their success or failure in getting the voters to support their side of the issue. The following table shows the position taken by each group during the campaigns in which they were active, the results of those campaigns, and the percentage of the time when the group was successful in supporting or opposing a bond issue.

The data in this table show that the two groups which are the most active in bond election campaigns--the State government and the local Chamber of Commerce--are also the least successful in obtaining support for their position. Both groups campaigned overwhelmingly in favor of the bond elections, and in a majority of cases they were unsuccessful. On the other hand, the two groups which had a lower level of campaign activity were more successful--particularly the League of Women Voters. Part of the League's success may be due to its research of the issues involved in the proposed projects; the League rarely supported issues where there was opposition.

Group	Activity	Pass	Fail	% Success
State Government	In Favor	4	7	36%
	Against	1	0	0
Chamber of Commerce	In Favor	9	12	42%
	Against	1	0	0
Ad Hoc Groups	In Favor	2	2	50%
	Against	0	6	100%
League of Women Voters	In Favor	6	1	85%
	Against	0	1	100%

The data contained in these last three tables indicate the variety of interest groups which can become involved in a campaign, heighten controversy and contribute to the defeat of the bond. This suggests that, to ensure passage, the proponents of the bond issue should be concerned about the ideas and interests of these groups and attempt to gain their support for the project when it is being formulated.

Partisanship of special interest groups. There were 35 jurisdictions which reported that interest groups had been active in the campaign over the bond issue. One of the questions asked of respondents in all of the communities studies was whether the groups active in the campaign had been partisan, ie, were political parties, or closely allied with a political party. Of the 25 communities where groups were active in the campaign, 10 reported that one or more of the groups were partisan, and 15 reported that all of the groups were non-partisan. Relating partisanship (variable 37) with the outcome of the election indicates that the alignment of an interest group with a political part will frequently contribute to this defeat on a bond issue, as evidenced by the following table.

Election Outcome	Partisanship of Groups			Total
	No Groups	Non-Partisan Groups	Partisan Groups	
Pass	11	8	1	20
Fail	4	7	9	20
Total	15	15	10	40

It is clear from this table that the most desirable situation for a successful election is to have no groups at all; the next most desirable situation is to have non-partisan groups; and the worst situation, in terms of success, is to have partisan groups active in the campaign. In fact, where partisan groups were present only 1 of the 10 elections was successful.

On the surface, it would seem that this phenomenon contradicts the idea that political parties are able to mediate conflicting interests and thus contribute to a government's ability to take action. But this concept applies only to cities where the political parties are strong and take leadership positions. These conditions do not apply to the majority of local American governments, and especially not to the non-partisan electoral systems which predominated in our sample.²³

Not only do political parties fail to resolve conflict in this situation, but the introduction of partisanship into a non-partisan campaign actually increases the level of conflict. As Wood points out, in non-partisan communities there is:

"... an outright reaction against partisan activity, a refusal to recognize that there may be persistent cleavages in the electorate, and an ethical disapproval of permanent group collaboration as an appropriate means for setting public disputes."²⁴

Voters react negatively to the introduction of party politics in a bond election campaign. They become suspicious of the motives of the partisan actors, since they believe that only "the public interest" should motivate voters and actors in elections. Thus, the work of partisan actors contributes substantially to election defeat.

Criticism Raised During the Campaign. Another variable which characterizes the campaign, and one which is closely related to the existence of opposition groups, is variable 119 the number of criticisms raised during the campaign. As the following table illustrates, there is a significant positive correlation between the number of criticisms raised and the defeat of bond issues. Those projects which stimulate criticism and controversy are much more likely to be defeated by the voters.

Election Outcome	Number of Criticisms Raised		Total
	0-3	4-10	
Pass	17	33	20
Fail	9	11	20
Total	26	14	40

The data permit an analysis of the frequency of different types of criticisms raised during the election campaigns and the relation of these types of criticisms to the election outcome. The five criticisms most frequently raised during bond election campaign are found in the following table.

This table indicates that there are three different ways that the cost of the project can become an issue in the campaign: the opposition can say that the bond will cause an unacceptable tax increase or a sewer fee increase; it can say simply that it is too expensive; or it can say that the distribution of costs and benefits is inequitable. Although the last criticism is raised least frequently, it is most likely to contribute to failure. This may be because it is easiest to prove. For example, if the government is proposing a project which will benefit only part of the community and is attempting to tax the entire community for its financing, the inequity of the situation can easily be pointed out to those persons who will be taxed but receive no benefits.

	Frequency Mentioned	Pass	Fail	% Fail
Passage of bond will cause an unacceptable tax or sewer fee increase	26	12	14	54%
Incorrect level of government is proposing the project (eg, should be regional if local)	16	5	11	69%
Cost or size of project is too large	13	3	10	77%
Inequitable distribution of costs and benefits	10	1	9	90%
Project is not technically necessary	10	4	6	60%

The criticism that project is not really necessary is difficult to respond to. For example, in Avon, Ohio, the proponents answered this criticism by pointing to a judgment by the Ohio Water Pollution Control Board that the town was polluting Lake Erie. The opponents replied that it was doubtful that Avon was polluting Lake Erie as much as Cleveland, and

they would be happy to control pollution by some means other than the elaborate sewer project in the small town of Avon was appropriate solution to the problem.

The argument concerning the appropriateness of the level of government taking action is another difficult criticism to handle in a campaign. It is clear, for example, that the Federal government has endorsed the idea of regional solutions to water pollution control. But when this argument is raised during an election campaign--either for or against regional solution--it tends ultimately to defeat the bond issue. The criticisms creates another decision which has to be made by local government and therefore another issue around which opposition forces can organize.

An Analytical Model of the Factors Influencing the Outcome of Bond Elections

As indicated in the introduction to this chapter, the major purpose of the regression analysis was to develop an analytical model which would explain the relationship between the important factors in the water pollution bond election process and the outcome of the referendum. A series of regression analyses were performed on different groups of variables. The regression analysis presented here identified the eleven variables discussed in the preceeding sections which explained a satisfactory amount of the variance in outcome.

By way of review, the basic concept of regression analysis is to produce a linear combination of independent variables which in combination will correlate as highly as possible with the dependent variable. This equation can then be used to "predict" values of the dependent variable. The difference between the value of the dependent variable and the value predicted by the linear combination of the independent variables is the "unexplained variance," also known as the "residual." The regression equation is then written as follows:

$$D = b_1I_1 + b_2I_2 \dots + b_nI_n + c + r$$

where D is the dependent variable, the I's are the independent variables, the b's are the regression coefficient (unnormalized), c is a constant and r is the residual.

The regression equation produced by our analysis is as follows:

$$\begin{aligned} \text{Outcome} = & -1.71180 (\text{Var } 035) -1.64499 (\text{Var } 078) +2.04666 (\text{Var } 109) \\ & -0.19989 (\text{Var } 119) +0.20139 (\text{Var } 098) -0.88602 (\text{Var } 037) \\ & -0.58100 (\text{Var } 077) -0.99979 (\text{Var } 015) -0.00003 (\text{Var } 097) \\ & +0.00001 (\text{Var } 002) -0.03124 (\text{Var } 083) -6.58936 + \text{residual} \end{aligned}$$

In other words, to obtain the outcome in terms of the percentage of votes in favor of the issue (variable 21), one multiplies the values taken by each independent variable by the coefficient preceeding it; adds together the results of each of these multiplications; then add that sum to the constant 6.58936. The extent to which this sum differs from the actual value of variable 21 in any given case is the amount of unexplained variance or the residual.

The selection of this equation has been guided by several considerations. First, the variables to be included had to be either quantitative or dichotomous. This constraint is imposed by the technique itself as explained in Appendix C. However, as also indicated in this appendix, most of the variables can be expressed in these terms and are consequently eligible.

A second and more restrictive requirement is that the variables be as independent as possible from one another (that is, not strongly inter-correlated) though individually correlated with the outcome. By choosing such variables, one attempts to get as close as possible to a "factor analysis" model where the variables are independent and represent a whole set of variables with which they are correlated but which are kept out of the equation.

The next requirement is imposed by the size of the sample and the nature of the regression technique, which together necessitates that the total number of variables retained should be minimum and in any case lower than 40, (the size of the sample). For a given amount of variance accounted for by the equation, the lower the number of variables in the equation, the better the result. This minimization is done automatically by the computer model that was used.

The amount of variance explained by this model is 62% and falls within the range customarily explained by regression analysis of social science problems.

The regression equation developed with these constraints explains 62% of the variance, which is comparable, or even slightly higher than what is generally obtained for this type of research.

In order to evaluate the weight of a variable in the total result, one generally "standardizes" the variables, that is, reduces the range of variation of each variable to the interval 0-1. This is done by subtracting from each variable its mean and dividing the result by its variance. It should be noted that there is no constant in the standardized regression equation. The new equation obtained is the following:

$$\begin{aligned} \text{Variable 21} = & -0.34963 (\text{Var } 035) - 0.33363 (\text{Var } 078) + 0.28022 (\text{Var } 109) \\ \text{Outcome} = & -0.21816 (\text{Var } 119) + 0.14343 (\text{Var } 098) - 0.14451 (\text{Var } 037) \\ & - 0.12012 (\text{Var } 077) - 0.08437 (\text{Var } 015) - 0.04491 (\text{Var } 097) \\ & + 0.0482 (\text{Var } 002) - 0.02221 (\text{Var } 083) \end{aligned}$$

Under this form, it is easy to see how much each variable contributes to the result, (that is, to the value of variable 021), since all of the variables now vary between zero and one. In addition, the sign of each of the coefficients indicates the direction in which each variable influences the outcome.

Thus, the variables which tend to reduce the proportion of votes in favor of the referendum are most importantly the political variables (especially the existence of special interest groups against the issue, variable 35, and the associations of increased taxes with the issue, variable 78. The variable that acts the most in favor of a positive outcome is the existence of a pollution problem (variable 109). These three variables together would explain 55% of the variation of the outcome. All the other variables add only 7% more in the numerical result. However, they add substantially more to the full understanding of the process.

In both cases the standard error is approximately 1.7. This means that the difference between prediction and actual value of the percentage of votes in favor of the issue is in average 1.7%. However, if the prediction error is low in average, it can be very high on a particular case. If the regression equation is used on a very large number of referenda, the errors made on each one will cancel out but the average error on the whole set of predictions cannot be reduced below 1.7% no matter how large the sample.

A Model for Forecasting Bond Election Outcome

In addition to the analytical model described above, we were also interested in developing another analytical model using only the variables which could be measured well in advance of a bond election. Unlike the first model which is highly dependent on the values of the campaign characteristics, this second model would enable the user to forecast the outcome of the election before data on the campaign variables were available.

The forecasting model relates the following variables to the outcome, with the associated coefficients (using standardized variables):

$$\begin{aligned} \text{Variable 21} &= +0.38574 (\text{Var } 109) -0.48607 (\text{Var } 078) -0.19497 (\text{Var } 002) \\ \text{Outcome} &\quad -0.31035 (\text{Var } 015) +0.20034 (\text{Var } 116) -0.17686 (\text{Var } 097) \\ &\quad +0.12395 (\text{Var } 098) -0.06237 (\text{Var } 083) +0.04372 (\text{Var } 102) \\ &\quad -0.02243 (\text{Var } 077) \end{aligned}$$

This equation explains only 46% of the total variance in outcome. The small amount of variance explained makes this an uncertain tool for forecasting outcome. But this fact, in itself, further emphasizes the importance of the political variables.

The existence of a pollution problem (variable 109) still plays a considerable role as does the repayment of the bonds by increased taxes (variable 78) even more important than in the previous equation. Such variables as the amount of the issue (variable 02) and the rate of population growth (variable 15) now also intervene with more emphasis. Two variables which did not add any significant amount to the variance in the previous equation are now reintegrated. These two variables are the indebtedness per capital (variable 116) and the percent of persons over age 65 in the population (variable 102). The difference in the present case is that it is not possible to envisage reducing the number of variables to the first two or three as the full equation explains a smaller percent of the variance than do the first three variables of the model in

in the previous section. One of these three variables, however, summarizes the whole campaign process whereas the second equation includes mainly data of demographic type.

Although it has been possible to explain a significant amount of variance in the outcome when the campaign variables are included, one must conclude that it does not appear to be feasible to develop a significant regression model which excludes them.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

Critical to the success of any water pollution control program is the capacity of the local municipality to raise their share of the financing. Whenever the financial decision of the municipality is subject to a bond election or referendum, there is a risk that the voters will decide against the proposed project. Unfortunately, there are no systematic data on the prevalence of the referendum for this purpose or the percentage of referenda that are defeated. However, expert opinion, corroborated by analysis of the existing data, suggests that about 40% of all sewer and other water pollution control projects are subjected to referenda and that of these, about 15% fail.²⁵ While this amounts to only about 6% of all of the local financing raised for this purpose, it still represents a major factor in the successful completion of water pollution control projects.

Moreover, analysis of referenda can provide some useful information about the "readiness" or "willingness" of local communities to undertake disruptive and expensive public improvements for water pollution control. When there is a referendum, the decision-making process of the local government is exposed to the interested observer. Thus, the bond election permits the observer to see more clearly what issues are of concern to the electorate and what factors may contribute to the defeat of water pollution control projects in general. Therefore, implications may be drawn from the bond election situation which have broader application than the referendum situation alone.

This study of the factors influencing the outcome of municipal bond referenda has identified three major aspects of the municipal bond process which, if changed, would increase the likelihood that a pollution control facility would be constructed: the process by which the facility is planned; the financial environment, particularly the bond market; and the approval mechanism required.

The major conclusion of this study is that bond elections for projects of this type are won or lost during the initial planning of the project. Critical decisions are made at this time concerning who will benefit from the improvement, who will pay the costs, and how they will be paid. If mistakes are made at this stage, or if there is poor coordination with everyone potentially interested in the project, there is little that the issue's proponents can do to rectify the situation. A decision about the means of financing is an especially important part of the project plan. The results of the case studies reflect clearly the voters' aversion to increased taxes and their desire for an equitable repayment mechanism. As seen in Chapter IV, the total amount of the project has a substantial indirect influence on the outcome of the bond election. Anything which local jurisdictions can do to reduce the amount of the project with outside funding will improve the chances of the bond's passage. Thus, the first series of conclusions and recommendations deals with the process of planning the facility.

A second major influence on the outcome of the bond election is the financial environment in which the bonds are formulated. Since there are a large number of bonds and a relatively small number of buyers, the buyer of the bonds exercises considerable influence on the legal and financial terms of the bond, tailoring them to his own advantage. Further, since the bond market is virtually immune to any influence from the local political situation, changes in the relationship between the buyer and seller of the bonds will have to come from some outside institution. Hence, another series of recommendations has been included which are intended to reduce the amount of influence that the

bond market has on the financial planning of the bond, and thereby shift the focus of the local government's attention from the interests of the buyer of the bond to the interests of the electorate.

The third aspect of the process has to do with the mechanism for approving pollution control facilities. While many municipalities are required to hold elections to authorize the sale of municipal bonds, others have alternative means of approval available to them. In some cases it is desirable to hold a bond referendum even when none is required by law. However, many local governments have the power to avoid this mechanism and would prefer to do so, but are unaware of the alternatives. Consequently, the third set of recommendations focuses on increasing the local government's knowledge of alternative financing and approval mechanisms available to their jurisdiction when initiating a water pollution control project.

The Planning Process

The Importance of Participatory Planning. An analysis of the data from the 40 case studies indicates that a high level of campaign activity is the most reliable predictor of a bond's election failure. In only two cases in which there was any opposition was the referendum able to pass. Further, where there were a large number of criticisms, the referendum passed only three times. Additional analysis of the level of campaign effort by local officials shows that a project facing opposition is nearly always unsuccessful, regardless of the amount of effort put into the campaign, while any level of campaign effort without opposition meets with success. The major factor determining the outcome of the referendum is therefore the presence of opposition groups and the availability of issues which they can criticize.

Evaluation of the in-depth case study material corroborates this conclusion. During these studies, the researchers frequently asked why particular bond issues failed. One of the most common responses was "because of politics." However, the analysis of our data has shown that it was not "politics," but the absence of politics which was the main cause for defeat of many of these bond elections. Politics can be defined as the art of compromise, a means of resolving conflict, or a mechanism for representing all interests. When a bond issue failed, it was frequently because all interests had not been represented. The bond issue offended some group who then publicly opposed it, and the proponents of the bond issue refused to compromise.

In Round Rock Texas, for example, persistent and vocal opposition arose against a sewer project which the opposition charged slighted poorer Black and Mexican-American sections of town (which had experienced very serious problems), while benefiting affluent land developers. The voters made aware of inequities in the project, defeated it at the polls. The mayor, however, recognizing that the leader of the opposition

had some valid criticisms and was gaining political strength on the basis of the sewer issue, restructured the project to respond to his criticisms. Despite some hard campaigning by the opposition leader, the issue passed easily in the next election. The mayor had been flexible enough and realistic enough to recognize that the project itself had serious weaknesses and failed to satisfy the needs of important interest groups in the community. Once their needs were incorporated in the project, the opposition lost its power and the issue passed. In sum, when all of the relevant interest groups are consulted before the project is formulated, and their interests are taken into consideration in the design of the project and the selection of a financing scheme, the opportunity for any serious opposition is significantly reduced and the election campaign itself assumes much less importance.

Since the existence or non-existence of opposition to the bond issue generally determines the outcome of the election, anything more than a low level of campaign activity will either contribute to the election's failure or turn out to have been unnecessary. If there is no opposition to the project, there is no need for a high level of campaign effort. On the other hand, when there is opposition, any level of campaign - low or high - is unlikely to be successful. If the proponents decide to keep the level of campaign activity low, they run the risk that the opponents will succeed in convincing a large proportion of the electorate to vote against the bond issue. On the other hand, if they decide to respond to the charges of the opposition, they risk becoming embroiled in a controversy which can decrease the voters' confidence in the bond issue and result in defeat.

This study provides no answer to the question of how to deal with opposition in a bond election. This depends on the facts of each individual case and on a careful assessment by local leaders of the potential costs and benefits of each strategy. However, it is possible to recommend that proponents of the project perform all of the groundwork necessary before the campaign begins so that opposition will never arise. The

preparation that needs to be done includes consulting interested individuals and groups, choosing on equitable means by financing, and seeking out Federal and State financial support where available.

Groups to be Consulted. In each community there are a number of different groups which may be affected by a proposed water pollution control project. Many local officials do not realize the importance of consulting these groups, primarily because they regard decisions about water pollution control projects as technical in nature to be decided by experts. But it is clear from the evidence of the 40 case studies that these decisions also involve fundamental questions about the values and objectives of the community, and the allocation of resources in a manner consistent with these aims.

Even when a local government is aware of the importance of consulting all of the groups which may be affected by the improvement, they may not know whom to contact. Although the types of groups that are likely to be interested in water pollution control vary from community to community, there are several which can be found in many communities and which behave in relatively predictable ways. A partial listing of these groups, their interest in water pollution control projects, their likely position on a proposed project, and the resources they can bring to bear in a bond election campaign are found in the table on the following page.

In addition to this information on the interests of special groups, local officials should bear in mind two additional facts. First, very few of these interests are monolithic. For example, even though the Chamber of Commerce may support the bond issue, there may be divisions of opinion within the business community over the nature of the sewer or drainage improvements. The extension of sewers into a new residential development may give one developer a comparative advantage over other developers and therefore may generate opposition from the latter.

GROUPS TO BE CONSULTED			
Group	Interest	Likely position on bond	Resources
Chamber of Commerce	Land development, economic development, employment, low tax rate	For	Money Prestige
Taxpayers organization	Low tax rate, low assessment	Against	Numbers of members
Good government organization (League of Women Voters)	Ending water pollution Informed electorate Honest government	For	Prestige Research
Local and regional planning agencies	Ending water pollution efficiently Consistency with existing plans	For	Research Authority to withhold funds
Homeowners	Preservation of character of community Low tax rate	Against	Number of members Cohesiveness
Minority groups	Equitable distribution of costs and benefits of project Improved public services	Unknown	Number of members Cohesiveness

Second, there may be groups which do not appear until the issue is proposed to the voters. For example, some of the most active groups are ad hoc groups which form around some aspect of the bond issue. These groups usually form to rectify an inequity in the distribution of costs and benefits of the proposed bond issue. One of the simplest ways of preventing this type of opposition is to exercise care in the planning process to eliminate inequities from the proposal.

Alternative Means of Financing. The method of repayment has one of the clearest and most significant relationships with the outcome of bond elections. If user charges are proposed as the means of repayment, it is more likely that the issue will pass; if a tax is proposed, then there is a greater likelihood of failure. There are two possible interpretations of the voters' preference for user charges over a tax increase. The most direct is that the voters simply balk at a tax increase of any kind and are more likely to defeat projects which require them. The second interpretation involves the notion of equity: those who benefit from the project should also pay for it, and user payments are inherently more equitable than a tax levy. Both of these interpretations may apply to an individual bond referendum.

Given the voters' explicit disdain for tax increases, it is surprising that the general obligation bond, with its clear consequences for the tax rate, is chosen so often by local governments as the means of repayment. The major reason for this is the fact that there is a larger market for general obligation bonds, primarily because the risk of default is presumed to be lower, since the full faith, credit and taxing power of the local community is supporting it.

Revenue bonds are riskier and hence more costly to finance. In addition to requiring a higher interest rate, (commensurate with the amount of risk being assumed by the buyer), they carry higher administrative expenses. Since the amount of revenue to be collected is based on the value of services rendered (user charges) or the value of

property benefit (assessment), they must be equitably assessed. This can be a costly process for a local government to undertake. In addition, because of the variety of ways of determining the fair charge administratively and judicially, these assessments are particularly susceptible to lawsuit.

Although the most prevalent means of financing improvements of this type are general obligation or revenue bonds issued by local governments, there are at least two other options which are seldom used. One such alternative is the special assessment bond which is repaid from an assessment against those who benefit from the facilities constructed with the proceeds. The major reason why special assessments are often avoided is because the whole problem of assessment is complex and unfamiliar to local government officials. Moreover, when there is a decision to make a special assessment, the means of assessment may be inequitable, and hence a campaign issue around which opposition can organize.

A second alternative means of financing water pollution control projects is the creation of a special district. A special district is effectively another layer of government placed on top of an existing layer. It provides a means for tapping the same revenue base without exceeding debt limitations. From the viewpoint of the voter, the major advantage of the special district is that it assures equity of those who are served by the improvement and those who pay.

Federal and State Financial Support. As the total amount of the issue increases, the likelihood of its passing decreases. Although the direct correlation between the size of the issue and the outcome is not large, it does appear that larger issues are more likely to arouse controversy in the campaign, which in turn leads to the bonds' defeat at the polls. This evidence suggests that local governments should seek alternative means of financing water pollution control projects in order to keep the total cost of the bond issue as low as possible.

According to the National League of Cities' publication entitled Federal Aids to Local Governments, there are at least twelve different grant and loan programs providing funds for sewer, drainage and other water pollution control projects. These range from the Housing Act of 1954 which provides loans for the financing of plans for all types of public works projects in urban areas, to the Appalachian Regional Development Program which provides grants for public facilities which contribute to the economic growth of Appalachia, to the Federal Water Pollution Control Program which provides financial assistance of all kinds to local governments for the planning and construction of various types of water pollution abatement projects. The Department of Agriculture, through the Farmers Home Administration, also provides loans for public facilities in rural areas. Many states contribute to the planning and construction of water pollution control projects, although their programs are generally smaller in scope.

The Federal government, as well as the National League of Cities and similar organizations, has attempted to simplify the process of applying for and obtaining grants by publishing catalogs of grants available for different types of projects. But the process is inherently complicated, as reflected in the existing catalogs, especially for the small municipality which is not large enough to have the resources to spend on "grantsmanship." This is especially true for the small water and sewer districts which are often responsible for administering sewer and drainage projects. Moreover, none of these catalogs provides information on state programs available to local governments.

Recommendations Concerning the Planning Process. Abt Associates recommends that the Environmental Protection Agency assist local governments in planning water pollution control projects, particularly those requiring a bond election. The objectives of this assistance would be to:

Increase local officials' awareness of the implications of their decisions regarding the nature of the proposed project and the means of financing that project for the outcome of the election;

Increase local officials' awareness of the importance of consulting all interested groups before making these decisions;

To provide local officials with the information and insight necessary to make decisions which will be more acceptable to the majority of the citizens they serve.

Abt Associates further recommends that this information be disseminated through a handbook for local government officials prepared by the Environmental Protection Agency in cooperation with the State water pollution control agencies, and distributed by these State agencies to local governments. The major reason for involving State agencies in this process is to take into consideration the important legal and administrative conditions concerning the bond election process which vary from State to State. Therefore, these handbooks should be tailored to meet the requirements of each State.

The following items should be included in the handbook:

A check-list of important community groups which might be concerned with water pollution control and sewer or drainage improvements. This check-list should also indicate in detail the concerns each group would be likely to have regarding any kind of water pollution control project.

Complete and easy-to-use information on grants available from the State and Federal governments, including a description of the aims of each program, the amounts of assistance available, eligibility requirements, and instruction on where and how to apply, and how to obtain qualified technical assistance where necessary.

Descriptions of alternative means of financing sewer and drainage improvements, with emphasis on more innovative schemes which are acceptable both to the voter and the ultimate buyer of the bond.

The Role of the Municipal Bond Market

As indicated previously, the financial character of the bond, and in particular its method of repayment, has a significant impact on the outcome of the bond election: those which are repaid by taxes are much less likely to pass than are those repaid by a direct charge to the users of the improvement. Local government officials are often not aware of the implications that this aspect of the bond has for the outcome of the election. Often this choice is delegated to a controller or treasurer, who may in turn hire outside financial consultants. However, even when local officials are well informed about the electorate's preferences for revenue financing, they are not always able to choose this approach without considering other factors.

The most important of these factors is the potential market for the bond. Three major forces affect the operation of the municipal bond market. First, there are a very large number of municipal bonds issued at one time and a relatively small number of buyers. By way of contrast, it is interesting to note that the nation's 500 largest corporations account for nearly all of the common stock, preferred stock and corporate bond issues in any given market period, but the New York Metropolitan area alone has 1,400 governments whose bonds compete for buyers. Because of technical variations in each individual issue, "guides" are required to lead the issue into the market. These guides are actually municipal bond counsellors who act as agents of the bond market by communicating to the local government the terms under which the market will buy a bond issue. Even when employed by a local government, the bond counsellor's major responsibility is to the eventual buyer of the bonds. Although he may be concerned with the general question of whether the electorate will approve the bond issue, his responsibility to his profession dictates that he prepare a technically perfect and highly marketable bond issue. Unlike the local politicians, his professional performance will be judged in the bond

market and not at the polls. Thus, local political considerations are ignored in favor of the market conditions.

The second major force which influences the market is the predominant use of underwriting, with no risk assumed by the underwriter. Thus no money changes hands until a buyer is found. Pressure to sell the bond is therefore on the issuer, not on the underwriter, although he is the one trying to place the bonds. As a result, the underwriter may adopt a "do it my way or don't do it" attitude in trying to sell the issuer's bonds. Once a buyer is found, the issuer is free to accept the buyer's terms or not sell at all. Thus, in the realities of the market, the underwriter tends to act more in the interests of the buyer than the seller.

While all bonds are fair investments, some bonds are excellent investments. Thus, the third major influence on the market is the attractiveness of a few very good bonds. The industrial revenue bond experience shows that when a very attractive bond hits the market, weaker bonds are not sold. This does not stem from a lack of investment money, (since nearly all municipal bonds can compete favorably with corporate securities and loans), but from the pervasive use of private placement. This transaction mechanism is slow because issuer, who need money quickly must compete for "early money" and limited cause only a certain portion of the investment market, namely the institutional buyer, can be reached. However, due to the impossibility of marketing the great bulk of municipal securities which are in large unwieldy "one-shot" issues, or a large number of small issues, the market must continue to be private.

The most important terms which the bond market influences is the means by which the bond will be repaid. This is the major distinguishing characteristic between general obligation and revenue bonds. Although the interest is higher on revenue bonds, the investor generally prefers the lower risk general obligation bonds which are backed by the taxing

power of the local jurisdiction. On the other hand, as the data have indicated, voters prefer revenue bonds because they do not appear to result in an increase in taxes. However, revenue bonds have a number of subtle hidden difficulties which make them equally unsatisfactory.

First, when revenue bonds are proposed, there is a tendency for the local government to ignore consideration of their population's ability to pay for the services which the new facilities will provide. Although this is done as a matter of course when a tax increase is proposed, it is not done when a user charge or a property reassessment will be required. Consequently, there is a greater chance of default if it turns out that the population is unable to afford the new service. To avoid default, the local government will find itself faced with higher administrative expenses than it anticipates as it attempts to collect the revenue for the facility or locate new sources of revenue.

The unexpected additional cost of collecting revenue will fall on the already much higher administrative expenses of revenue bonds, resulting in part from the additional costs of computing the user charge or assessment, but much more from the increased number of hearings, suits, and adverse legal action in general. Since user charges or assessments are theoretically based on the value of the service or the increase in the value of the property, they must by law be equitably assessed. However, from the standpoint of the local government, the basis for the calculation of the user charge or property assessment is not the value added to the individual household, but an equitable portion of the total amount of revenue required to service the debt. In matching valuation to debt service, therefore, there is an implicit assumption that the increased benefit to all the individual owners and the capital expenditures are equal. Yet, there may be a need for capital expenditure to benefit the community as a whole, though benefit to individuals would not be that great. In this situation, the bonds should theoretically default or

standards of valuation would have to be bent. Generally, the latter occurs, and thus the revenue bond breeds lawsuit, as administrative and judicial standards of value start to diverge.

These and the other terms of the bond are set forth in the indenture, the contract between the buyer of the bond and the issuing authority, which states the rights and obligations of both parties. In this highly competitive market situation which the bond buyers can pick and choose their investments, the terms of the indenture agreement may determine whether or not a local community's bond will sell.

In order to lessen the amount of influence the bond market has on the financial character of municipal bonds, Abt Associates recommends the following:

1. The Environmental Protection Agency should formulate a model indenture for municipal water pollution control bonds.
2. The EPA should investigate the feasibility of a model statute to establish state bond banks.
3. The EPA should investigate the possibility of developing new types of municipal financing for water pollution control facilities which would have characteristics attractive both to the voters and to the investors.

The Model Indenture. Through the indenture, the bond buyer is presently able to exercise a major influence on the financial terms of a municipality's bond issue. This situation could be changed by standardizing the indenture utilized by investment bankers and bond counsellors. The present informal indenture practice increases the selling costs to the municipality, while providing only ambiguous protection to the holder of the bonds. By contrast, a model indenture would enable local governments to predict difficulties in the indenture formulation more accurately. It would also provide holders with more effective protection, thereby lowering the amount of interest that the bond would have to pay

to attract a buyer. Although there would necessarily be a wide range of financial options possible under the model indenture, the increase in standardization would eliminate minor differences between essentially like bonds and reduce some of the unnecessary competition among sellers. This would enable local government officials to give more consideration to the preferences of the electorate when formulating a bond issue.

It is recommended that, through research and conference with legal and financial experts, the Environmental Protection Agency formulate a model indenture for municipal water pollution control bonds. The Trust Indenture Act may be used as a starting point, with an eye toward rewriting it where financing realities diverge. Once formulated, promulgation of the model indenture should proceed in two directions: toward acceptance by State legislatures as a part of the municipal code, and toward informal acceptance by the legal and financing communities. Initiative and leadership will be required on the part of the EPA in the acceptance as well as the formulation stage.

State Bonds for Water Pollution Control Facilities. While the model indenture addresses itself to some of the legal technicalities which influence the formulation of bond issues, the basic problem of the buyer's market still remains. Another approach to this problem which is worthy of further investigation is State bonding of water pollution control projects. This approach is attractive because State securities avoid many of the difficulties inherent in municipal bonds. Unlike municipalities and other local issuing authorities, the states are limited in number and carry continuous, up-to-date credit information. As a result, their bonds are more marketable. Since the states have greater financial resources and more flexibility in the way they spend their money, they can issue bonds periodically, or when market conditions are favorable.

A system for state bonding of water pollution control projects would function like a state bank: local governments would issue their own securities, and when they encountered problems in the market, the State would buy the bonds. They could buy them either at a depressed rate or at close to the market rate.²⁶ They would then issue their own bonds to provide the money to buy the local bonds. Additional bonds would be issued for actuarial purposes, with the state taxpayers footing the bill. However, in a theoretical model, no new state taxation need be imposed. The State would make enough profit on this to be able to pay for administrative expenses and still build an actuarial reserve. In Vermont, where a State bond bank is operating, this has been the experience to date.

The advantages of such a bond bank would be:

Market control over local issues would be pared to a minimum.

State bonds - more independent, less costly and more competitive - would be substituted for local bonds.

A potential for public sale to small investors, as in the case of U.S. Savings Bonds, would exist.

The local government should realize a lower cost of financing sewer and drainage improvements.

Although control over local issues by outsiders would not be eliminated, control by the market and its representatives would be replaced by State control. State control is still public control, and therefore sensitive to political problems and answerable to the voters. The involvement of the State might also facilitate a more regional approach to water pollution control.

One foreseeable disadvantage to this system is that state taxpayers must assume the burden of speculation by local governments. However, if the State bears an interest in the debt of the local municipalities, it may insure that local government's expertise and education in financing is thorough and effective.

Thus Abt Associates recommends that a model statute to establish a State bond bank be investigated further. Research should include the details of such a statute, its impact on the market, and identification of those states most likely to be aided by such a provision. Since the state of Vermont has enacted such a proposal, its history will be important in the investigation. Research should then be refined to determine whether the scope should be limited to water pollution control financing.

If research is fruitful, then the model statute should be promulgated among the states.

New Types of Financing. It is not clear that the financing of water pollution control facilities should be limited, as it currently is, to either the revenue bond or the general obligation bond. As discussed above, both of these bonds have substantial undesirable characteristics. The general obligation bonds frequently result in an increase in taxes and therefore are more likely to fail in bond elections. Revenue bonds have several hidden difficulties related to the assumptions underlying the user charge. The problem, then is to combine the political desirability of the revenue bond with the marketability and low administrative cost of the general obligation bond.

To accomplish this, more innovative techniques for financing public expenditures for water pollution control should be explored. This will require stimulating the financial community's creative resources through a variety of means. Private conferences with municipal bond attorneys and investment banking experts should prove most fruitful,

especially in view of the informality of the municipal bond underwriting process and the lack of literature and even verbal communication of information within the financial community on municipal financing. Small seminars for leaders in field with the goal of formulating new financing options should also prove effective.

Disseminating Information on Financial Innovations. It is also recommended that information on innovative financing schemes currently being utilized throughout the nation be disseminated to local governments through the states. This could be accomplished most efficiently through a periodical newsletter. Information included would cover the general topic of municipal bond financing of water pollution control facilities, describing new and newly proposed projects throughout the nation and highlighting the most innovative ones. Such a newsletter could also double as a means of disseminating engineering information. It would be sent to the appropriate agency in each state and would be made available, in addition, to local government and to the financing community.

Alternatives to the Referendum

Many local governments must obtain the approval of their electorates before they can issue municipal bonds for public facilities, in particular those for pollution control. For many municipalities, this requirement is imposed by state statutory or constitutional law (see Appendix A); for others, it is a requirement of their local town or city charter. However, since state law is always binding over local charter law, changes in the legal approval mechanism must ultimately come through changes in state law. As pointed out in Chapter I, most of the State mandates for the use of referenda are statutory and not constitutional. Thus substantial changes can be made in the limitation on municipal financing without constitutional amendments or revisions.

Beyond the legal requirements, there are often good reasons for holding a referendum for a major public expenditure. The major reason is that it provides citizens of the community with an opportunity to express their opinions directly on a matter of public policy. This can be useful for local government officials wishing to obtain guidance from the electorate on their priorities for public expenditure.

Although some local governments have the power to avoid this approval mechanism, and would like to do so, they are unaware of the alternatives. Since the statutory and constitutional requirements regarding bond elections are quite complex, they can be easily misunderstood. For example, they may apply to general obligation bonds repaid by taxes, but not to revenue bonds. Similarly, referendum requirements rarely apply to special districts created for limited purposes such as sewage collection and treatment. Since both of these financing methods have significant disadvantages as well as advantages, it is important that municipal decision makers be better informed about them.

In order to expedite local financing for pollution control facilities, Abt Associates recommends the following:

1. Local government officials should receive current information on all available means of developing local financial support for pollution control facilities. This should include discussion of the advantages and disadvantages of revenue and special district financing, and a methodology by which local officials can evaluate the opportunities and risks to their community of these approaches. This information should be included in the handbook for local officials described earlier in this chapter.
2. The Environmental Protection Agency should initiate formulation of a model State water pollution control act which would expedite both local financing and regional cooperation for water pollution control.

A Model State Act for Water Pollution Control. A model act for water pollution control would have several advantages:

1. It would expedite Federal/State and Federal/local effort through the efficiency of a uniform approach to pollution control.
2. It would expedite regional interstate and intrastate cooperation, within the context of uniform legislation on all the jurisdictions involved.
3. It would expedite local effort by simplifying the legal process, by opening avenues of communication to the State and Federal government and by providing opportunities for alternative approval mechanisms to the referendum.

To achieve these advantages, a model state water pollution control act should do the following:

1. Specify the public purpose and goals of the legislation.
2. Define the scope of the water pollution problem.

3. Authorize local planning, action and funding.
4. Permit State and Federal contributions of resources.
5. Describe and permit alternative financing techniques, and alternative approval mechanisms.
6. Establish whatever State and Federal technical assistance seems to be desirable to further the overall goal of a planned, cooperative effort to control water pollution.

Implementation of the act at the State level might be facilitated by choosing a number of states which are especially responsive to Federal technical assistance in this area. Recommendations for new legislation could be formulated by the state water quality boards, with the assistance of the Environmental Protection Agency, and then proposed to the state legislature. This experience would be studied with a view toward moving to other states with a similar approach. A snow-ball effect could result as the slower states follow the lead of the more progressive ones in altering their sewer and sewage treatment law.

APPENDIX A
STATE CONSTITUTIONAL AND
STATUTORY PROVISIONS
CONCERNING BOND REFERENDA

STATE CONSTITUTIONAL PROVISIONS
CONCERNING BOND REFERENDA

Alabama	A. C. A. 1958 Constitution, Art. 12, s. 222. Specific exemption of sewer bond issues from referendum requirements when the special assessment system is used.
Alaska	A. S. Constitution, Art. 9, s. 9. Referendum required for contracting of debts for capital improvements.
Arizona	A. R. S. Constitution, Art. 9, s. 8. No referendum required to contract debts within a specified debt limit of 4% of assessed valuation. A referendum may raise this limit to 15%.
Arkansas	A. S. A. 1947 Constitution, Art. 16, s. 1. Referendum required for general obligation bonds, exempted for revenue bonds. Bond percent set at 6.
California	A. C. C. Constitution, Art. 11, s. 18. Referendum required for all debts which exceed revenues for that fiscal year.
Colorado	C. R. S. 1963 Constitution, Art. XI, s. 8. Referendum required for the contracting of any debt.
Connecticut	No constitutional provision
Delaware	No constitutional provision
Florida	F. S. A. Constitution, Art. IX, s. 6. Referendum required for issuance of bonds. Florida Supreme Court held revenue bonds are certificates, not bonds.
Georgia	C. G. A. Constitution, s. 2-6001. Referendum required for counties and municipalities to contract debt. Bond per cent set at 6.
Hawaii	No constitutional provision
Idaho	I. C. Constitution, Art. 8, s. 3. Referendum required to contract debt. Only revenue bonds are permitted. Idaho Supreme Court has held revenue bonds are debt of issuing authority.
Illinois	No constitutional provision

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Indiana	No constitutional provision
Iowa	No constitutional provision
Kansas	No constitutional provision
Kentucky	No constitutional provision
Louisiana	L. R. S. Constitution, Art. 14, s. 14. Counties, municipalities and districts are required to hold referenda before contracting debt. Bond per cent set at 6.
Maine	No constitutional provision
Maryland	No constitutional provision
Massachusetts	No constitutional provision
Michigan	No constitutional provision
Minnesota	No constitutional provision
Mississippi	No constitutional provision
Missouri	V. A. M. S. Constitution, Art. 6, s. 26(c) and (d). Counties municipalities, and special districts are required to hold referenda prior to issuance of general obligation and revenue bonds.
Montana	R. C. M. 1947 Constitution, Art. 13, s. 6. In the question of sewers, the debt limit may be extended by referendum; otherwise, no constitutional provision.
Nebraska	No constitutional provision
Nevada	No constitutional provision
New Hampshire	No constitutional provision
New Jersey	No constitutional provision
New Mexico	N. M. S. 1953 Constitution, Art. IX, S. 10, 12. Referendum required for the contracting of debt. New Mexico Supreme Court held revenue bonds and general obligation bonds based on special assessments not debt.
New York	No constitutional provision

North Carolina	G.S.N.C. Constitution, Art. VII, s. 7. A referendum is required for all debts except those which are "necessary expenses." In <u>Reed v. Howerton Engineering Co.</u> , 188 N.C. 39, 123. S.E. 479 (1924), the North Carolina Supreme Court held sewers to be a necessary expense. They have also held revenue bonds not debt.
North Dakota	N.D.C.C. Constitution, s. 183. No referendum required when not exceeding debt limit. Referendum enables public utility to exceed debt limit.
Ohio	No constitutional provision
Oklahoma	No constitutional provision
Oregon	No constitutional provision
Pennsylvania	No constitutional provision
Rhode Island	No constitutional provision
South Carolina	No constitutional provision
South Dakota	S.D.C.L. 1967 Constitution, Art. XIII, s. 4. Referendum required to contract debt. South Dakota Supreme Court held sewer assessment bonds not debt.
Tennessee	No constitutional provision
Texas	No constitutional provision
Utah	U.C.A. 1953 Constitution, Art. XIV, s. 3. Referendum required to contract debt.
Vermont	No constitutional provision
Virginia	No constitutional provision
Washington	R.C.W.A. Constitution, Art. VIII, s. 6. (Amend. 27). Referendum is required to increase the debt limit. Assessment sewage bonds are not counted in debt limit computations. <u>Smith v. Seattle</u> , 25Wn. 300, 65P. 612 (1901).

- West Virginia²⁷ W. V. C. Constitution, Art. X, s. 8. Referendum is required for contracting of debt. Insofar as this provision requires a 60% majority rather than a simple majority, it is unconstitutional. Lance v. Board of Education, _____ W. Va. _____, 170 S.E. 2nd 783, (1969).
- Wisconsin No constitutional provision
- Wyoming W.S. 1957 Constitution, Art. 16, s. 4. Referendum required for contracting of debt.

USE OF REFERENDA BY STATE

State	1970	1969	1968	1967	1966	Total
ALABAMA	-	-	2	1	-	3
ALASKA	-	2	1	3	1	7
ARIZONA	-	3	-	-	-	3
ARKANSAS	-	1	1	1	-	3
CALIFORNIA	12	18	19	17	30	96
COLORADO	1	2	3	8	2	16
CONNECTICUT	2	6	3	4	5	20
DELAWARE	-	-	-	1	-	1
FLORIDA	-	-	2	1	4	7
GEORGIA	1	-	2	-	-	3
HAWAII	-	-	-	-	-	-
IDAHO	-	1	1	8	1	11
ILLINOIS	9	15	29	21	12	86
INDIANA	-	-	-	-	-	-
IOWA	-	-	-	-	-	-
KANSAS	-	-	-	3	3	6
KENTUCKY	-	-	-	-	-	-
LOUISIANA	-	3	6	7	11	27
MAINE	-	1	1	-	-	2
MARYLAND	-	-	1	-	-	1
MASSACHUSETTS	-	1	1	-	-	2
MICHIGAN	2	5	15	8	13	43
MINNESOTA	-	2	2	1	2	7
MISSISSIPPI	-	2	3	6	1	12
MISSOURI	1	-	6	13	2	22
MONTANA	-	-	1	1	2	4
NEBRASKA	5	3	1	4	1	14
NEVADA	-	-	-	-	-	-
NEW HAMPSHIRE	1	-	1	5	-	7
NEW JERSEY	-	-	-	-	-	-

State	1970	1969	1968	1967	1966	Total
NEW MEXICO	-	1	6	2	3	12
NEW YORK	-	-	-	-	1	1
NORTH CAROLINA	-	3	2	3	6	15
NORTH DAKOTA	-	-	-	1	-	1
OHIO	1	10	19	9	13	52
OKLAHOMA	-	18	25	17	23	83
OREGON	5	7	7	11	13	43
PENNSYLVANIA	-	1	1	1	1	4
RHODE ISLAND	3	2	5	4	6	20
SOUTH CAROLINA	-	-	-	-	1	1
SOUTH DAKOTA	4	3	9	11	7	34
TENNESSEE	-	-	-	-	-	-
TEXAS	70	127	95	101	86	469
UTAH	-	1	5	1	1	8
VERMONT	-	3	5	3	3	14
VIRGINIA	-	6	4	9	4	23
WASHINGTON	-	2	5	2	2	11
WEST VIRGINIA	-	-	-	-	-	-
WISCONSIN	-	-	-	1	2	3
WYOMING	2	2	5	4	2	16
						<u>1,212</u>

STATE STATUTORY PROVISIONS

29

<u>State</u>	<u>Citation</u>	<u>Authorized Political Subdivision</u>	<u>Type of Bond</u>	<u>Referendum Requirement</u>	<u>Bond Percent</u>
Alabama	C. A. R. 1958 Th. 37 s. 308	counties, municipalities, special districts	general obligation revenue	no no	none specified none specified
Alaska	A. S. s. 29, 50, 010-050	counties, municipalities special districts	general obligation revenue	yes	none specified
Arizona	A. R. S. s. 35-41	counties, municipalities special districts	general obligation, revenue	yes yes	none specified none specified
Arkansas	A. S. A. 947 s. 10-4101	municipalities and special districts	revenue only	no	6% (Const.)
California	A. C. C. s. 4600	municipalities	general obligation revenue	yes yes	none specified none specified
Colorado	C. R. S. 1963 s. 139-52-1	counties and special districts of counties	general obligation revenue	yes yes	6% 6%
		municipalities	general obligation revenue	yes no	6% 6%
		special districts	general obligation revenue	yes yes	6% 6%
Connecticut	C. G. S. A. s. 7-245	municipalities, special districts	general obligation revenue	no no	6% 6%
Delaware	D. C. A. Art. 9 s. 2201	counties	general obligation revenue	no no	none specified none specified
Florida	F. S. A. s. 167.01 F. S. A. s. 170.01	municipalities municipalities (special assessment)	general obligation revenue	yes no	none specified none specified
Georgia	C. G. A. s. 87-201 C. G. A. s. 87-801	counties municipalities	general obligation revenue	yes no	6% (Const.) 6% (Const.)

<u>State</u>	<u>Citation</u>	<u>Authorized Political Subdivision</u>	<u>Type of Bond</u>	<u>Referendum Requirement</u>	<u>Bond Percent</u>
Hawaii	H.R.S. s. 67-5	counties	general obligation revenue	yes	6% (Const.)
Idaho	See State-Constitutional provisions		revenue	no	6% (Const.)
Illinois	I.R.S. 1969 s. 11-14.1	municipalities	revenue	(1) by order of state, no	none specified
				(2) no, unless 15% petition for one	none specified
Indiana	B.I.S. s. 48-2701	special districts	revenue	no, unless 15% petition for one	none specified
		municipalities	general obligation revenue	no	none specified
		counties	general obligation revenue	no	none specified
Iowa	I.C.A. s. 358.7	counties, special districts municipalities	revenue	no	none specified
Kansas	K.S.A. s. 12-617 K.S.A. s. 12-3104	municipalities municipalities	general obligation revenue	no	5%
Kentucky	K.R.S. 107.010 K.R.S. 76.010	municipalities, special districts counties	revenue	yes	none specified
Louisiana	See State Constitutional Provisions	municipalities, special districts, parishes	revenue	yes	none specified
Maine	M.R.S.A. s. 30-4251 M.R.S.A. s. 30	municipalities	general obligation revenue	yes	6%
			general obligation revenue	yes	6%

<u>State</u>	<u>Citation</u>	<u>Authorized Political Subdivision</u>	<u>Type of Bond</u>	<u>Referendum Requirement</u>	<u>Bond Percent</u>
Maryland	A.C.M. Art. 43 s. 409 A.C.M. Art. 43 s. 428 A.C.M. Art. 43 s. 445	municipalities municipalities special districts	general obligation revenue	yes no no	5% 6% 5%
Massachusetts	M.G.L.A. Ch. 83	municipalities, special districts	general obligation revenue	yes no	none specified none specified
Michigan	M.C.L.A. s. 46.171	counties	general obligation revenue	no, unless % petition for one no, unless % petition for one	6% 5%
Minnesota	M.C.L.A. s. 123.241 M.S.A. s. 115.01 M.S.A. s. 115.41	municipalities, special districts special districts municipalities	general obligation revenue general obligation revenue general obligation revenue	yes no yes yes no no	6% 6% 6% 6% 6% 6%
Mississippi	M.C.A. 1942 s. 3374-116	municipalities	general obligation	yes-for new plants; no-for improvements or for amounts under \$50,000 "	6%
Missouri	M.C.A. 1942 s. 3598-01C See State-Constitutional provisions	special districts	revenue general obligation revenue	" " "	6% 6% 6%
Montana	R.C.M. 1947 s. 11-2216	municipalities, special districts	general obligation municipalities	yes yes	none specified none specified

<u>State</u>	<u>Citation</u>	<u>Authorized Political Subdivision</u>	<u>Type of Bond</u>	<u>Referendum Requirement</u>	<u>Bond Percent</u>
Nebraska	R.S.N. 1943 s. 18-501	municipalities	general obligation revenue	yes no	5-1/2% 6%
Nevada	N.R.S. s. 318, 170	special districts	general obligation revenue	yes no	6% 6%
	N.R.S. s. 710, 400	counties	general obligation revenue	no	6%
	N.R.S. s. 267, 250 N.R.S. s. 271, 265	municipalities municipalities	general obligation revenue	no no	none specified none specified
New Hampshire	N.H.R.S.A.	counties	general obligation revenue	no	none specified
		municipalities	general obligation revenue	no	none specified
		districts	general obligation revenue	yes	none specified
		towns	general obligation revenue	yes	none specified
New Jersey	N.J.S.A. s. 40-14A-1	counties, municipalities	general obligation revenue	no	none specified
	N.J.S.A. s. 58-12	special districts	general obligation revenue	no	none specified
New Mexico	N.M.S. 1953 s. 14-40-9	municipalities, special districts	revenue	no	none specified
	N.M.S. 1953 s. 75-18-1	special districts	general obligation revenue	yes yes	none specified none specified

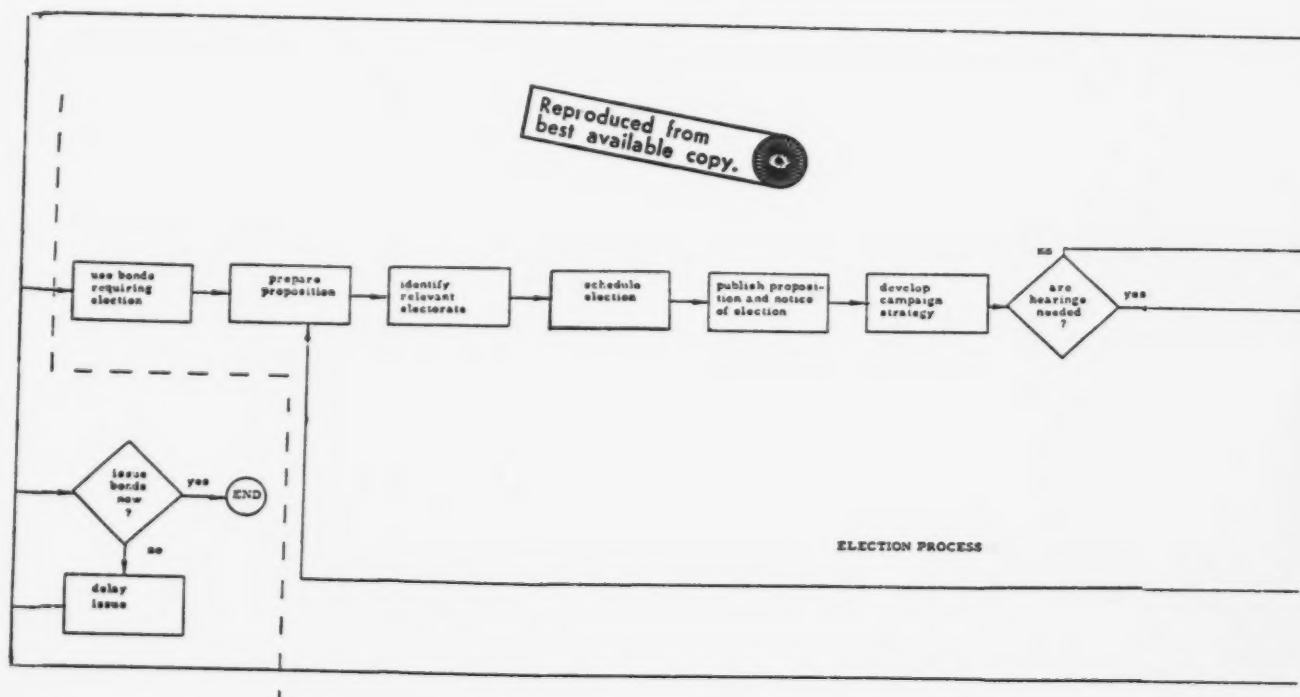
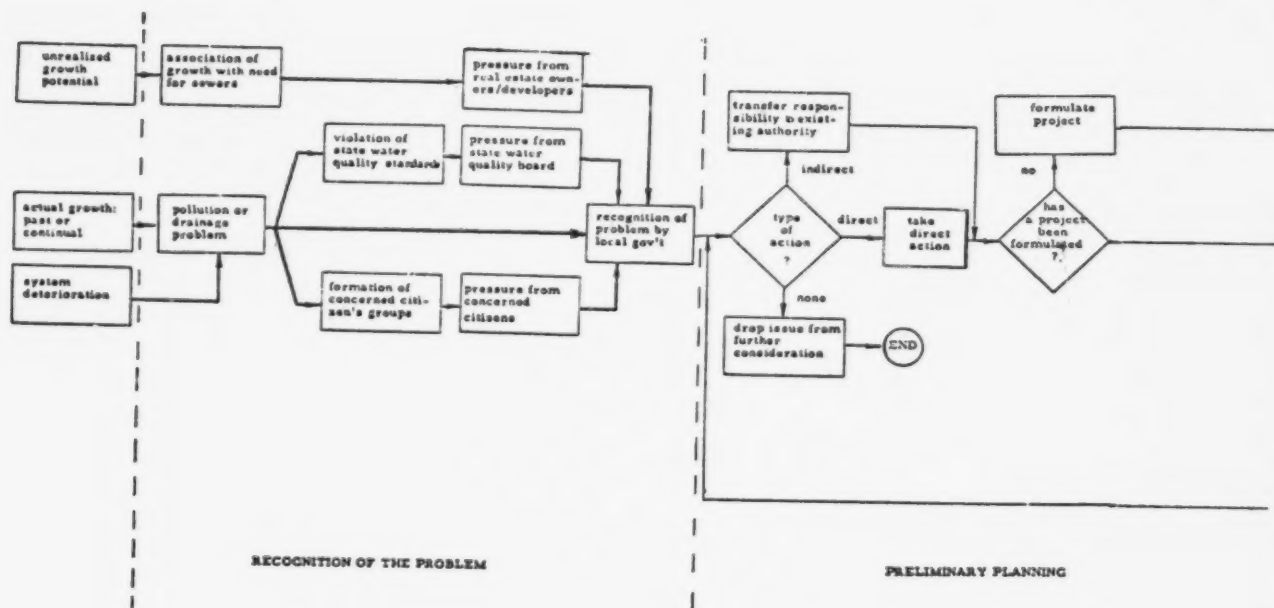
<u>State</u>	<u>Citation</u>	<u>Authorized Political Subdivision</u>	<u>Type of Bond</u>	<u>Referendum Requirement</u>	<u>Bond Percent</u>
New York	McKinney's Local Finance Law §. 34.00	municipalities	general obligation revenue	no	none specified
	McKinney's Town Law §. 190C	districts	general obligation revenue	no	none specified
North Carolina	G.S.M.C. §. 160-424.1	municipalities	general obligation revenue	no	none specified
		special districts	revenue	no	5%
North Dakota	N.D.C.C. §. 40-34-01	municipalities, special districts	general obligation revenue	no	none specified
			revenue	no	none specified
Ohio	O.R.C.A. §. 729	municipalities	general obligation revenue	no	none specified
	O.R.C.A. §. 6117	counties	general obligation revenue	no	none specified
Oklahoma	O.R.C.A. §. 6115, 6119	special districts	general obligation revenue	no	none specified
	O.S.A. §. 11-271	municipalities	general obligation revenue	no	none specified
Oregon	O.S.A. §. 19-871	counties, special districts	revenue	no	none specified
	_____ §. 224.010	municipalities, counties, special districts	general obligation revenue	yes, unless state requires the issuance of bonds	6%
Pennsylvania	P.P.S.A. Tit. 53 §. 6201	municipalities, special districts	revenue	"	6%
			general obligation revenue	no	none specified

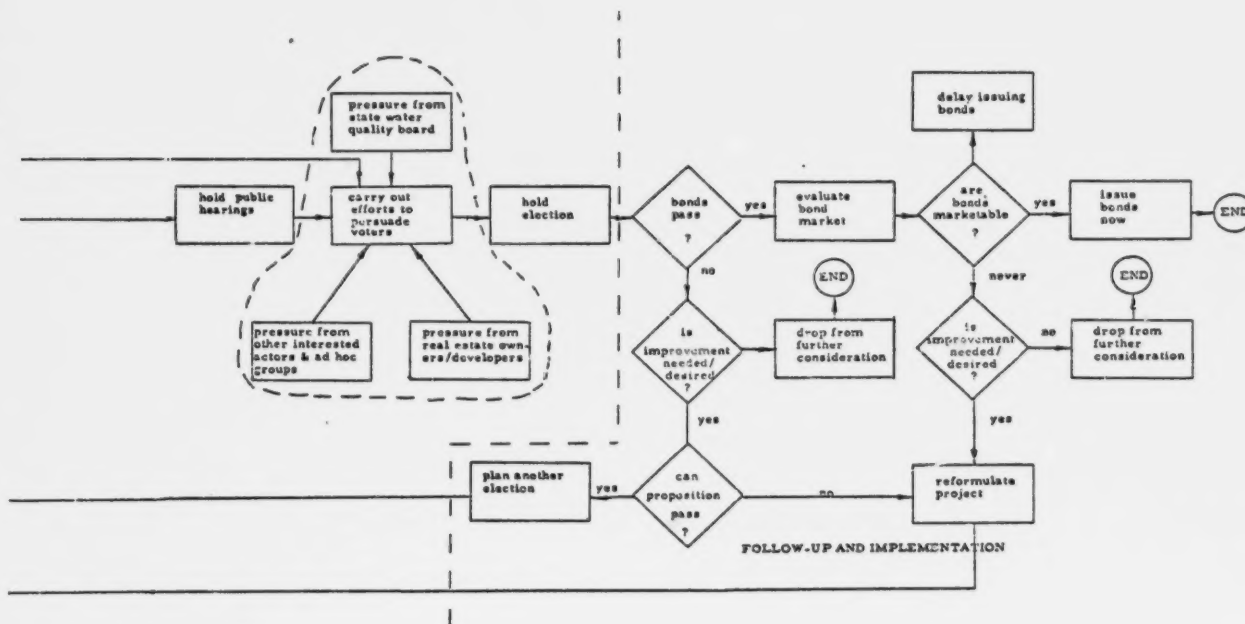
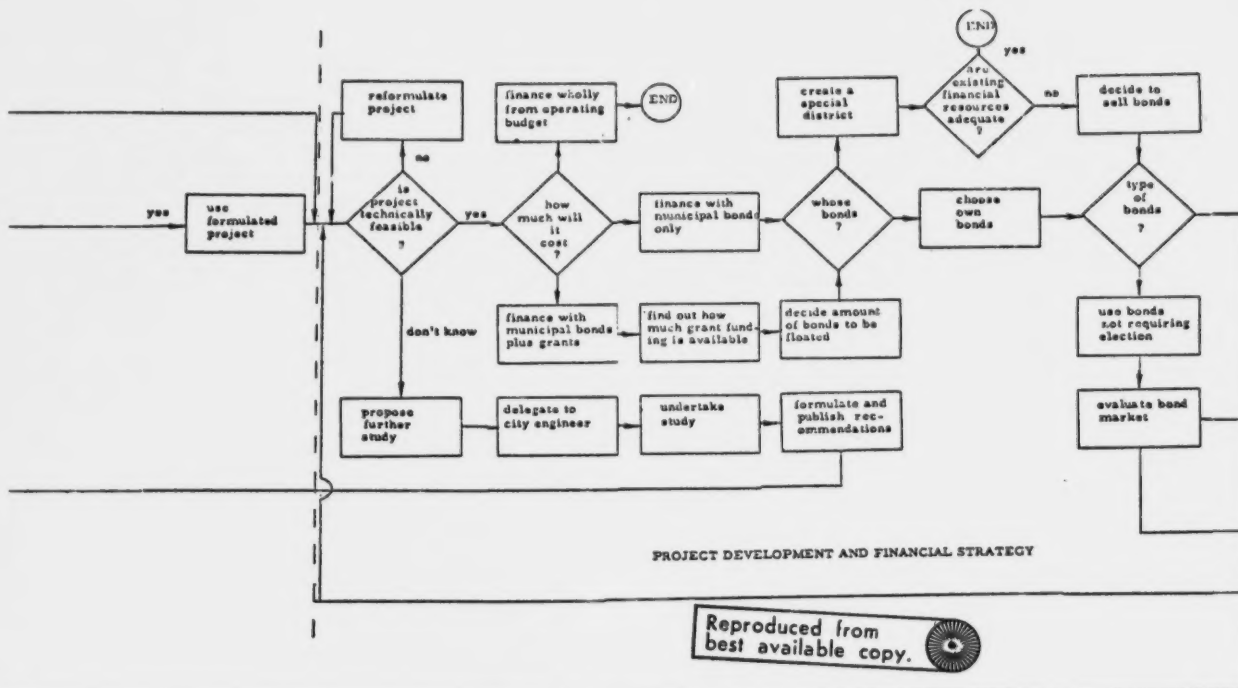
<u>State</u>	<u>Citation</u>	<u>Authorized Political Subdivision</u>	<u>Type of Bond</u>	<u>Referendum Requirement</u>	<u>Bond Percent</u>
Rhode Island	G. L. R. I. 1956 s. 45-14-1(m) G. L. R. I. 1956 s. 46-21-1(d)	special districts	general obligation revenue	no	6%
			general obligation revenue	no	6%
		municipalities	general obligation revenue	no	6%
South Carolina	C. L. S. C. 1967 s. 59-618	municipalities	general obligation revenue	yes	none specified
		special districts	general obligation revenue	no	none specified
		special districts	general obligation revenue	yes	6%
South Dakota	S. D. C. L. 1967 s. 9-48-1	municipalities, special districts	general obligation revenue	yes	none specified
		municipalities	general obligation revenue	yes	none specified
		municipalities	general obligation revenue	yes	none specified
Tennessee	T. C. A. s. 6-1401	municipalities	revenue	no	6%
Texas	Vernon's Ann. Civ. St. Art. 1112	municipalities	revenue	yes	none specified
		counties, special districts	general obligation revenue	yes	none specified
Utah	U. C. A. 1953 s. 17-6-1	municipalities	general obligation revenue	yes	7%
		municipalities	general obligation revenue	yes	7%
		municipalities, counties	general obligation revenue	yes	7%
Vermont	V. S. A. Tit. 24 s. 1751	municipalities, counties	general obligation revenue	yes	6%
Virginia	C. V. 1950 s. 15.1-1239	counties, municipalities & special districts	general obligation revenue	no	6%
		counties, municipalities & special districts	general obligation revenue	no	6%

<u>State</u>	<u>Citation</u>	<u>Authorized Political Subdivision</u>	<u>Type of Bond</u>	<u>Referendum Requirement</u>	<u>Bond Percent</u>
Washington	R.C.W.A. s. 35.67.030	municipalities	general obligation revenue	yes	6%
	R.C.W.A. s. 66.04.010	counties, special districts	general obligation revenue	no	6%
West Virginia				yes, except for ad- ditional issues for up to 20% of origi- nal	6%
	W.V.C. s. 8-18-1	municipalities	general obligation revenue	yes	6%
	W.V.C. s. 16-12-14	municipalities, special districts	revenue	no	6%
	W.V.C. s. 16-13A-1	counties, special districts	revenue	no	5%
Wisconsin	W.S.A. s. 67.05	municipalities, special d istricts	general obligation revenue	no, unless peti- tioned by 10%	none specified
		counties	general obligation revenue	no	none specified
Wyoming	W.S.A. s. 59.9	municipalities	general obligation revenue	yes	6%
	W.S. 1957 s. 15, 1-410	counties, special districts	general obligation revenue	yes	6%
	W.S. 1957 s. 35-162			no, unless peti- tioned by 40%	6%

APPENDIX B
**A LOGICAL PROCESS MODEL OF THE
MUNICIPAL BOND ELECTION PROCESS**

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APPENDIX C
MORE TECHNICAL ASPECTS OF
THE METHODOLOGY

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The Population

The purpose of this appendix is to provide additional information on some technical aspects of our study, namely the statistical population, the sampling procedure and the potentials and limitations of the statistical methods used for processing the data we collected.

As indicated in Chapter 3, the set of referenda adopted as our basic statistical "population" was the computer listing of all the municipal bond referenda published in the Daily Bond Buyer and compiled by the Investment Bankers Association of America. This computer list includes about 75% of all the referenda held between January 1966 and June 1970 by cities, counties, townships, districts and statutory authorities to approve projects for the construction of sanitary sewers, storm and drainage projects and treatment plants. These projects are classified in the IBA system as codes 21 and 28. Projects designated code 22, water and sewer combined, were also sampled, but code 20, water, was excluded.

Some special consideration was given at the outset of the study to the inclusion of drainage projects in the statistical population. Although they are not often associated with pollution control, they are intended to prevent flooding and consequent health hazards arising from water stagnation, flooded basements and overflowed septic tanks. They therefore play a role in environmental protection. Furthermore, classifying projects into categories according to their purpose often requires difficult decisions of whether a project is predominantly for drainage or sewer purposes. After completing our interviews, we found that several of the projects classified as drainage projects actually consisted also of sewer construction and were associated with a pollution problem. For these reasons, it is useful that they have been included.

The Sampling Procedure

Our statistical population includes 1254 referenda, 1047 that passed and 207 that failed. Since we were interested in comparing the attributes of the referenda that passed with those that failed, an equal number was sampled from each of these two categories. The time and budget available for the study allowed us to document 20 referenda that passed and 20 that failed. This represents a sampling rate of 1/50 for those that passed and 1/10 for those that failed.

For each year, the referenda held are classified by lexicographic order within each geographic subdivision (city, county, etc.). This means that within these geographic subdivisions the referenda are classified in alphabetical order by state and within each state they are classified in alphabetical order according to the name of the location where they were held. Since this list has a definite structure, that structure had to be taken into account when the sample was selected in order to avoid any geographical biases.

In order to do so, we selected the procedure of systematic sampling. It consists of taking every p th sampling unit after a random start. After ordering our list sheets by year starting from 1970 and ending in 1966, we considered first the 207 referenda that failed. As the sample size of this stratum is 20, our sampling interval is $p = 207/20 = 10$. Then we drew a number at random from 1 to 10 out of an excerpt of Kendall and Babington Smith's table of random numbers. This number turned out to be 9. The ninth referendum of our list was then used as the random start. We then selected the nineteenth, twenty-ninth, thirty-ninth, etc., referendum on our list until exhaustion which is reached almost exactly when the 20 referenda are drawn.

Without changing the order of the list, we repeated the same procedure for the 1047 referenda that passed. This time the sampling interval was $p = 1047/20 = 50$, approximately, and the random start was 43.

The properties of systematic sampling can be summarized as follows:

A systematic sample selected with interval p after a random start yields a sample in which the population elements have equal probabilities of selection.

If any attribute is observed on the sample, the sample mean of this attribute is an unbiased estimate of the population mean.

If the population units were thoroughly shuffled and mixed before they were ordered on the list, the systematic sample would be equivalent to a simple random sample.

If the nearby elements of the list are similar with respect to the attribute under study, the systematic sample is then more efficient than the simple random sample. That is, the variance is lower than random selection formulas would indicate. The description given above of our population list features geographical clustering, size clustering and chronological clustering. Moreover, these clusters do not present a systematic periodical character as the number of referenda in each state or city is not the same every year. This provides enough evidence that the systematic sampling procedure that we adopted is more efficient than the simple random procedure and is therefore more appropriate.

Systematic sampling allows a simple replacement procedure if some of the cities selected are unwilling to participate. There is no need to replace the sample by another one; it is sufficient to consider the initial list as circular and to add new units to the list by adding new intervals p to the last unit selected in the previous sample. However, this procedure should be considered as a last resource as it does not yield a strictly equal probability sample. We did not have to replace any units initially selected except for one.

The frequency distributions derived from our final set of data show regularities with respect to the population as a whole which confirm the random character of our sample and its reasonably accurate representation of the IBA list. For instance, the distribution of the referenda in our sample according to the year when they were held is similar to that of the IBA list. There are more referenda in our sample from the West, Southwest, and Midwest than from the East, but this also reflects the regional distribution of referenda in the population. The sample is also fairly representative with respect to the type of governmental unit issuing the bonds. The only direction in which the sample appears to be biased is in its over-representation of drainage projects, (code 28). However, since several of these projects also include sanitary sewer construction or are associated with a pollution problem in other ways, this does not appear to be a serious deficiency.

Statistical Inference

Two types of questions arise in connection with the possibilities of making inferences from our sample data to the population as a whole. The first problem is the familiar one of drawing inferences about how individual voters will behave in an election on the basis of our data. Since no survey research was conducted on individual voter attitudes, it is not possible to predict how different types of voters will behave.

The second question is related to the size of the sample relative to the size of the population of interest, (all referenda for municipal bonds for water pollution control projects). It is often assumed that a larger population requires a larger sample in order to give results that have the accuracy of a smaller sample drawn from a smaller population. The fallacy of this assumption can be explained both mathematically and by an appeal to intuition. The complete equation for specifying sample size includes the factor $(1 - \frac{n}{N})$, known as the finite population correction, where N is the size of the population, and $\frac{n}{N}$ is called the sampling fraction. When the sampling fraction is .05 or less, the finite population correction is so close to 1 that it has minimal effect on the size of the sample. Therefore it is generally ignored by statisticians when calculating sample size for large populations.

The intuitive argument considers two populations, one of 1,000 persons, and another of 1,000,000 persons. If you take a sample of one person from the first population and a sample of 1,000 from the second population, the sampling fraction is the same in both cases. Estimates of a distribution of characteristics based on the second sample, however, would clearly be more reliable than the first. The principle behind accepting a sample of 1,000 from 1,000,000 population is the same principle that allows the assertion that if a sample of 200 has been taken, and the sampling fraction less than 5%, then it does not matter significantly what the size of the population is.

A homey analogy may help to illustrate this phenomena. Assume that you wish to compare a bowl of one kind of soup with a bathtub of another kind of soup. Although there is much more soup in the bathtub than in the bowl, it isn't necessary to sample more than a spoonful to know how the rest will taste, regardless of whether it comes from a bowl or a bathtub, assuming the soup is homogeneous.

The Statistical Techniques Used and the Level of Measurement of the Data

The data collected to characterize each referendum have been arranged along a variety of scales. These scales can be classified into types, each of which is associated with a given level of measurement. In this section each characteristic is classified in its scale category and the different statistical models appropriate to each category are discussed in connection with their potential ability to provide information on the factors affecting the outcome of the referenda.

Levels of Measurement of the Data: Type of Scales. The customary categorization of scales represents a progression from low to high levels of measurement. The lowest level of measurement corresponds to a classification according to certain characteristics and the assignment of labels to the various categories. Although numerical values may be assigned to these categories, they are equivalent to the labels. The type of scale that corresponds to this level of measurement is a nominal scale. For instance, variable 001 representing the region where the referendum was held has been arranged along the following scale:

- 1 = Northeast
- 2 = South
- 3 = Midwest
- 4 = Southwest
- 5 = West

When it is possible to order categories with respect to the degree to which they possess a certain characteristic, we can derive an ordinal scale. Such a scale provides only a rank order and gives no information about the magnitude of the intervals separating the ranked objects. For example, the role played by a newspaper during the campaign towards the passage of the issue can be arranged along the

the following ordinal scale:

- 1 = Important against
- 2 = Low against
- 3 = Low in favor
- 4 = Important in favor

Most of the dichotomous data collected in our survey (fail, pass; absence, presence) can be considered on ordinal scale.

When it is possible not only to rank the referenda with respect to the degree to which they possess a certain characteristics, but also to indicate the distances between them, we can derive an interval scale. This type of scale implies that numerically equal distances on the scale represent equal distances in the property being measured. In other words, it implies the existence of a unit of measurement. In this type of scale, it is meaningful to add and subtract intervals as well as to take ratios of differences between scale values. One cannot, however, state that an object with a scale value of 6 is twice as good as an object with a scale value of 3 because the scale has no natural zero. Ratio scales have both a constant unit of measurement and a natural zero and therefore permit all arithmetic operations. The typical example of interval scales is that of the temperature (fahrenheit or centigrade) scales. Besides the year of the issue and some others, most of our referendum characteristics are not strictly measured according to an interval scale; indeed, in most cases when a unit of measurement is available, a natural zero is also often available and the corresponding scale is ratio scale. For example, the population can be arranged according to the following ratio scale, by adopting 500 persons as a unit:

1 = 0-499
 2 = 500-999
 10 = 1,000-4,999
 20 = 5,000-9,999
 etc —

For the purpose of using some statistical techniques, it may be useful to transform an interval or ratio scale into an ordinal scale. Such is the case for cross-tabulations where categories can be regrouped and labeled in a different way than according to their original interval scale.

The following table presents a classification of each of the variables according to the strongest type of scale they can be associated with, given its nature and level of measurement. Descriptors of the variables (region = character 1; amount of issue = character 2; etc.) can be found in Appendix D in the Code Book.

Nominal	Ordinal	Interval	Ratio
1, 3, 6, 7, 8, 12, 13	2, 5, 9, 10, 11, 20	4, 22, 27	14, 15, 21, 31, 32
16, 17, 18, 19, 23	25, 33, 34, 35, 36, 40	28	76, 83, 84, 86, 87, 88, 89
24, 26, 29, 30, 37, 38, 39	41, 42, 43, 44, 45, 46, 47		90, 91, 97, 98, 99, 100, 101
63, 64, 68	48, 49, 50, 51, 52, 53, 54		102, 103, 104, 105, 106
77, 78, 79, 80, 81, 82	55, 56, 57, 58, 59, 60, 61		
92, 93, 96, 107, 108	62, 65, 66, 67, 69, 70, 71, 72		
110, 111, 112, 113, 114, 115	73, 74, 75, 94, 95		
	109		

Statistical Techniques Appropriate to Each Type of Characteristic.
 All statistical techniques can be used with interval and ratio characteristics, from cross-tabulation (with the series of statistical tests

usually conducted in order to examine the strength and significance of the relations among variables) to single and partial correlation and to multiple, partial and stepwise regression models.

For the nominal and ordinal variable - that is, the non-quantitative ones - all the techniques cited above are not applicable due to their restrictive assumptions. The only traditional statistical tools that are applicable are cross-tabulations (with the usual tests) and partial correlations using Kendall's tau (that is, a systematic use of one of these tests).

The reason for this is that the more powerful statistical tools use the standard correlation coefficient, also called 'product moment' correlation coefficient, as a measure of the relationship between two characteristics. This coefficient makes use of the scale value of the different characteristics. When these scale values are arbitrary numbers that merely represent labels, such as:

1 = Northeast

2 = South

etc —

the value of the correlation coefficient will vary with the label numbers and therefore is meaningless.

However, there is a particular case for which the value of the correlation coefficient will not depend on the label numbers and that is the case where the two characteristics are scored on scales having only two values. These scales are called dichotomous scales. When one of the characteristics is scored on a continuous scale and the other on a dichotomous scale, the resulting correlation is called a "biserial" correlation. When both characteristics are scored dichotomously, we have a "fourfold" correlation. In these two cases, the application of the product-moment correlation formula with any

arbitrary values assigned to the two categories of the dichotomous scale - or scales - will provide the same result and the corresponding coefficient will therefore be meaningful.

The two coefficients obtained, respectively called the "point-biserial coefficient" and the "Phi coefficient" are simply particular cases of the standard product-moment correlation coefficient. For the purpose of their calculation, any two numbers may be assigned to the two categories, but the computation is minimized by using 0 and 1.

The overwhelming majority of the non-quantitative variables that we have collected is actually of dichotomous nature, (pass-fail, presence-absence, etc). These can therefore be analyzed by means of the same sophisticated techniques as the quantitative variables. The remaining variables that are not naturally dichotomous can be redefined so that the possible values are regrouped into two categories, or so that each type of answer is associated with a dichotomous variable representing the presence or absence of this particular type of answer.

Introduction of New Variables

The first round of statistical analyses shed light on some of the major variables in the outcome of the referendum. However, in order to understand certain relationships better, some new variables were derived and others were cancelled. These new variables are based on manipulations of the initial variables.

VARIABLE 116 This variable is the indebtedness of the city per capita. It consists of variable 89, total indebtedness, controlled for population, variable 14.

VARIABLE 117 This is an index of coincidence of those who voted with those who will be served by the project and those who will pay for it. It is a numerical variable built by using variable 10, coincidence of

population served and paying, and variable 11, coincidence of population served and voting.

- VARIABLE 118 This variable represents the level of campaign activity. It is the sum of all the variables from 52 to 62 which indicate the use or non-use of particular types of media for advertising. As there is no reason to distinguish among the variables, they have not been assigned different weights. Hence, variable 118 is simply the sum of these variables.
- VARIABLE 119 This variable represents the amount of criticism raised against the issue. It is the sum of all variables from 63 to 75 inclusive. As in the construction of Variable 118, each of these dichotomous variables representing types of criticism, has been recoded so that the numbers zero and one represent the absence and the presence of a given criticism type. The means of deriving the variable are the same as for 118 also hold here.
- VARIABLE 120 This variable indicates whether or not the water pollution bond issue combined with any other issues on the ballot.
- VARIABLE 121 This variable indicates whether issues on the same ballot as the water pollution bond issue, but not combined with it.
- VARIABLE 122 This variable indicates whether the water pollution bond has been split into two or more parts to be voted on separately.
- VARIABLE 123 This variable represents the number of people, groups and organizations that took positions for or against the project. It is defined as the sum of variables 40 to variable 51 inclusive. As in variables 118 and 119, this variable seems to be more meaningful than the individual variables that comprise it.

VARIABLE 124 This variable combines variables 110 and 111 in the same way as variables 10 and 11, and represents a scale on which the topographical characteristics of the project are recorded.

VARIABLE 125 This variable indicates the existence of local or Federal regulations in relation to the project. It operates on variables 114 and 115, using the same transformation as the one for variable 117.

Besides, several variables have been recoded so that they present only two categories (presence or absence of a given characteristic) These are:

VARIABLE 12 Partisanship of the government election.

VARIABLES 38 Role of the newspaper and role of other
and 39 media.

VARIABLES 33, Existence and partisanship of groups for
35, and 37 and against.

We have eliminated variables such as variable 116 (use of water front) and variable 96 (rating system: Moody or Standard and Poor) as they showed no explanatory power.

After counting the variables added, those removed, those aggregated, those replaced and those kept, we arrive at a set of 99 variables amendable to standard correlation analysis and 5 or 6 variables purely nominal such as the region, the month, where the referenda were held, etc., which are analyzed through cross-correlation only.

Tests of Significance and Measures of Association

As indicated in Chapter 3, the relationship between each pair of variables was statistically analyzed by various tests of significance to determine the probability that the observed distribution could have occurred by chance. The strength of the relationship was also tested by means of another set of tests. This section includes a short description of each of the tests to which our data were subjected.

Chi-square. The chi-square statistic allows us to test the independence between two variables. Chi-square only indicates the likelihood of obtaining a given distribution of empirically observed values on the basis of chance alone; it does not measure the degree of association. It is calculated by first squaring the differences between the observed and expected values in each cell, dividing each by the expected value for that cell, and summing over all cells, as follows:

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

If the two variables are independent, then there will be no difference between the observed and expected values, and chi-square will be 0. The larger the differences between the observed and expected values, the larger the value for chi-square.

The significance level of chi-square can be calculated or obtained from a chi-square table. When using the table, calculate the number of degrees of freedom (multiplying the number of rows minus 1 times the number of columns minus 1) and locate the chi-square value closest to the one obtained by the formula above. The column heading will indicate the level of significance of this chi-square value. In the tables derived for the purpose of our study, these operations have

been computed automatically and the results (not significant or significant and the level of significance) have been printed.

Yates Chi-square. This test computes a chi-square which is corrected for continuity. Since the chi-square distribution tables are based on a large sample, the sampling distribution in the test statistic will approximate the sampling distribution in the chi-square table only when it is large. When the expected frequencies are as low as 5, the observed values are corrected by either adding or subtracting 5 from each to bring them closer to the expected values. The value for chi-square is then calculated as above.

Fisher's Exact Test. Fisher's exact test is used with 2×2 contingency tables to yield the exact (rather than approximate) probability that the observed distribution differs from a random distribution. Briefly, the test requires the computation of the exact conditional probability of the observed table, and of all more extreme "hypothetical" tables with the same marginal totals.

Since the Fisher test is an exact test, it is generally preferable to the chi-square test corrected for continuity. The chi-square test ordinarily results in somewhat lower probabilities than the Fisher test, and therefore one risks rejecting the null hypothesis when it should be accepted. Fisher's exact test is more conservative and avoids this problem. However, if the smallest expected value is greater than 5, and the continuity correction is used when N is small, then the two tests will yield nearly the same results.

Phi Coefficient, C Coefficient and Cramer's V. The three statistics described above are concerned with whether or not a relationship exists, and the level of significance and indicates how much certainty one can have in that existence. However, none of them says anything about the strength or importance of the relationship.

One of the most commonly used measures of the strength of an association is the phi coefficient which is defined as:

$$\text{phi } (\phi) = \sqrt{\frac{X^2}{N}}$$

It essentially adjusts chi-square for the total N (sample size) since the value for chi-square is directly proportional to the number of observations. In a 2 x 2 table, phi will vary from 0 to 1.

When a phi is calculated for a contingency table which is not 2 x 2, it has no upper limit. Another measure of association, introduced by Cramer, corrects for this condition. It is defined as follows:

$$V = \sqrt{\frac{X^2}{N \text{Min}(r-1, c-1)}}$$

where $\text{Min}(r-1, c-1)$ refers to the minimum of the two values: rows minus 1 or columns minus 1.

Cramer's V will vary between 0 and 1 for all tables, and will be identical to phi in 2 x 2 tables.

Pearson's contingency coefficient (C) is another indicator, based on the chi-square, of the strength of a relationship between two variables. Its formula is as follows:

$$C = \sqrt{\frac{X^2}{N + X^2}}$$

In a 2 x 2 table, the upper limit for C is .707, although this value increases as the number of rows and columns increase. For this reason, C should not be used without a correction when comparing tables of different sizes.

Measures of Association Based on Probabilistic Approaches. Several other tests of association have been developed which avoid some of the problems inherent in chi-square. Since they involve various probabilistic interpretations and vary from 0 to 1, they have an intuitive meaning which is easy to interpret. For this reason, they are often preferable to the measures of association based on chi-square. Included in this group of statistics are the following: lambda, tau B, tau C, gamma, and Sommer's D.

The lambda asymmetric and symmetric tests were suggested by Goodman and Kruskal. The asymmetric test is defined as follows:

$$\text{Lambda} = \lambda_b = \frac{\sum_k \max_j f_{jk} - \max_k f_{.k}}{N - \max_k f_{.k}}$$

where $\sum_k \max_j f_{jk}$ represents the sum of maximum values of the cell frequencies in each column and $\max_k f_{.k}$ represents the maximum value of the row of totals.

It can be interpreted as the relative decrease in the probability of error in guessing in which row a unit belongs when its column category is known, over the case when there is no information about the column category. When applied to the bond referendum data, it is the relative decrease in the probability of incorrectly guessing the outcome of the election when it is known, for example, how the bond is to be repaid, compared to the situation in which this information is not available. The lambda asymmetric test assumes that the rows define the dependent

variables. The lambda symmetric avoids this assumption, but has the same interpretation. It is defined as follows:

$$\text{Lambda} = \frac{\sum_k \max.f.{}_k + \sum \max.f.{}_{jk} - \max.f.{}_k - \max.f.{}_j}{2N - \max.f.{}_k - \max.f.{}_j}$$

where $\sum \max.f.{}_{jk}$ and $\max.f.{}_k$ are defined for lambda asymmetric, $\max.f.{}_j$ is the maximum column total, and $\sum \max.f.{}_{jk}$ is the sum of the maximum values of the cell frequencies in each row.

Kendall's Tau B and Tau C can be used to correlate two ordinal scales. Tau B is used for tables with an equal number of rows and columns, and tau C for tables with different numbers of rows and columns. As long as both variables can be ranked, these statistics will measure a degree of association which varies from -1 to +1. This measure cannot be interpreted in terms of the percentage of variation which it explains, since the notion of variation has no meaning with ordinal scales. Tau is essentially a measure of the degree to which pairs in the same order exceed the number of pairs in the reverse order.

These two statistics are calculated by determining the number of possible pairs in the table $(1/2)N(N-1)$ and then dividing them into three groups:

P = all pairs in which the order on one variable is the same as the order on the other—concordant pairs

Q = all pairs in which the order on one variable is the opposite of the order on the other—discordant pairs

T = all pairs in which at least one variable shows a tie

then

$$\text{Tau B} = \frac{P - Q}{1/2N(N-1)}$$

In words, tau B is the number of pairs in which the order on one variable is the same as the order on the second, minus the number of pairs for which the order is different, adjusted for the total number of possible pairs.

Tau B can be computed with adjustment for ties by the use of the formula

$$\text{Tau B} = \frac{P - Q}{\frac{1}{2}N(N-1) - T_1 - \frac{1}{2}N(N-1) - T_2}$$

where T_1 equals the number of ties in the first variable, and T_2 equals the number of ties in the second variable.

Tau C has the formula

$$\frac{2m(P - Q)}{N^2 (m - 1)}$$

where m represents either the number of rows or the number of columns in the table, whichever is smaller.

The Gamma Statistic is another ordinal symmetric measure. Its formula is

$$\text{Gamma} = \frac{P - Q}{P + Q}$$

where P and Q have the same meaning as they do for Kendall's Tau.

The Gamma measure has a clear interpretation even in the case of ties: namely, the probability of "like" or "same order" minus the probability of "unlike" or "different order," given two units drawn at random without ties on either variable.

The Sommer's D Statistic is similar to Gamma, but considers ties in the rank as valid information and can be applied to both symmetric and asymmetric cases.

In the asymmetric case, the asymmetry assumption is that the columns of the table represent the categories of the dependent variable while the rows represent the categories of the dependent variable. The statistic could be interpreted as the probability of "like order" minus the probability of "unlike order" (given no ties on the column variable), when two units are drawn at random from the table.

Additional Analyses Performed on the Data: Factor and Cluster Analysis

In addition to the analysis discussed in the main body of the report, the 99 variables amenable to standard correlation analysis have also been processed through factor analysis and cluster analysis in order to derive possible patterns among the set of referenda. More specifically we attempted to classify the referenda into groups such that the referenda within a group were more similar to other referenda in their group than to referenda belonging to different groups. If in addition, the distribution of successes and failures differed significantly from a group to another, that is, if most of the referenda which failed appeared in a group and most of those which passed appear in another — then, the analysis of the dissimilarities between each group could be interpreted in order to define global patterns of referenda associated with passage or failure.

This type of analysis has essentially the same goal as regression analysis. Indeed, the regression equation obtained in Chapter 4 is used to calculate the mix of major variables associated with a given outcome. However, the set of possible mixes is very large as each variable can take on several values and consequently the number of combinations of these values is very high. If significant clusters are available, the number of acceptable values of a given variable is subdivided, each subdivision being associated with one of the groups. This could simplify the analysis of the consequences of combinations of changes that could be made in some of the variables. For example, one could see the effects of changes in the level of campaign activity.

Two separate techniques and computer programs have been used to cluster the referenda in our sample. The first is the natural grouping program which forms part of the Multivariate Statistical Analyses designed by Kenneth Jones of the Harvard School of Education. The second is a cluster program designed by Fred Bookstein at the Harvard Center for Behavioral Science. Both programs use factor analysis as

an intermediate step to orthogonalize the input dimensions.

The results of the groupings given by these two programs are very similar and provide groups which unfortunately are not discriminated by the pass-fail criterion. That is, the number of cases of passage (or failure) in each group is about the same, and the proportion of each is very close to 50%.

This result suggested the relevance of more powerful clustering techniques using the full information content of our qualitative as well as quantitative variables, in particular those related to the political process and the campaign activity. Such techniques have recently been programmed for computers and are part of the O.S.I. R.I.S. package developed at the University of Michigan and available through the Harvard Computing Center. However, the application of these programs to our data was beyond the time and budget limits of the present study.

APPENDIX D
FILE OF STATISTICAL DATA:
CODE BOOK, DATA FILE
AND INTERVIEW GUIDES

CODE BOOK

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The present codebook is prepared to describe the coded data and to indicate the IBM card columns in which the data are punched.

The first four fields (columns 1 to 10 included) are the identification fields. In the DATA-TEXT System which we intend to use, they are not given variable numbers.

Missing characteristics are indicated by leaving the relevant columns blank for the corresponding referendum.

Missing data are differentiated from the statement "not applicable" by adopting uniformly the code 0 for the latter.

As more than one card is required to record all the data on each referendum, the card number is part of the identification field and is punched in column 10.

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LIST NO. 1

Location	Alpha ID Code	Number ID Code	State Code
Columbus, Tex.	CØLMB	01	46
Harris Co. W. Dist. 73, Tex.	HAR73	02	46
Rockport, Tex.	RØCPT	03	46
Athol, Mass.	ATHØL	04	23
Batesland, S.D.	BATES	05	44
Harris Co. W. Dist. 90, Tex.	HAR90	06	46
Palo Alto, Calif.	PALAL	07	05
Warren, Mich.	WAREN	08	24
Bend, Oreg.	BENDØ	09	39
Kyle, Tex.	KYLET	10	46
Jackson, Wyo.	JACKS	11	54
Mill Valley, Calif.	MILLV	12	05
Rolla, Mo.	RØLLA	13	27
Alvin, Tex.	ALVIN	14	46
Royse City, Tex.	RØYSE	15	46
Jefferson for CDD, La.	JFRSN	16	20
Petaluma, Calif.	PETAL	17	05
Brevard, Sewer, N.C.	BRVRD	18	35
Belton, Drainage, Tex.	BELTN	19	46
Van Alstyne, Tex.	VANAL	20	46
DeKalb Co., Ga.	DKALB	21	12
Mankato, Minn.	MNKTO	22	25
Portland, Tex.	PRTLD	23	46
Simi Val Co. Sant D, Calif.	SIMIV	24	05
Douglas, Ark.	DGLAS	25	02
Roselle, Ill.	RØSEL	26	24
Oakwood, Oh.	ØAKWD	27	37
Oklahoma City, Okla.	ØKLAC	28	38
Round Rock, Tex.	RNDRK	29	46
Brookshire Mun W.D., Tex.	BRØØK	30	46
Donaldsonville, La.	DØNLD	31	20

Location	Alpha ID Code	Number ID Code	State Code
Great Falls, Mont.	GT FAL	32	28
Cache W/S, Okla.	CACHE	33	38
Groves, Tex.	GRØVS	34	46
Hotchkiss SD, Colo.	HTCHK	35	07
Morgan City Drain, La.	MORGN	36	20
Avon Sewer, Oh.	AVØNØ	37	37
Moore Sant., Okla.	MØØRE	38	38
Cuero W/S, Tex.	CUERØ	39	46
Los Angeles C. Sew, Calif.	LACTY	40	05

CARD 1

Identification

Col. 1-5 Alphanumeric: Location of referenda (see attached list no. 1)

Col. 6-7 Numerical identification of the referenda (see attached list no. 1)

Col. 8-9 Identification of state where the referenda were held (see attached list no. 1)

Col. 10 CARD NUMBER: 1

Data from IBA List

VARIABLE NUMBERS

Col. 11 Region (see attached map)

1 = NE
2 = S
3 = MW
4 = SW
5 = W

Col. 12 Amount of Issue

1 = Less than \$99,000
2 = \$100,000 - 499,000
3 = \$500,000 - 999,999
4 = \$1 million - 4,999,999
5 = \$5 millions and above

Col. 13-14 Month

01 = JAN
02 = FEB, etc....
12 = DEC

1

2

3

Col. 15	<u>Year</u> 6 = 1966 7 = 1967 8 = 1968 9 = 1969 0 = 1970	4
Col. 16	<u>Outcome</u> 1 = Pass 2 = Fail	5
Col. 17-18	<u>IBA Use of Proceeds Code</u> 21 = Sewers 22 = Water and Sewers 28 = Drainage Sewers	6
Data from City Clerk Data Sheet		
Col. 19	<u>Largest Governmental Unit</u> 1 = City 2 = County 3 = District 4 = Township 5 = Statutory Authority 6 = Sewer District 7 = Others	7
Col. 20	<u>Type of Government</u> 1 = Strong Mayor-Council 2 = Weak Mayor-Council 3 = Council-Manager 4 = Commission 5 = Other	8
Col. 21	<u>Existence of Independent Governmental Units</u> 1 = Yes 2 = No	9

Col. 22	<u>Is population to be served the same as population who pays?</u>	10
	1 = Yes	
	2 = No	
Col. 23	<u>Is it the same as the population who voted?</u>	11
	1 = Yes	
	2 = No	
Code 24	<u>Type of Election of the Local Government</u>	12
	1 = partisan	
	2 = non-partisan	
Col. 25	<u>Type of Election of the Local Government</u>	13
	1 = Ward	
	2 = At-large	
	3 = Ward and At-large	
Col. 26	<u>Population</u>	14
	1 = 0 - 499	
	2 = 500 - 999	
	3 = 1,000 - 4,999	
	4 = 5,000 - 9,999	
	5 = 10,000 - 24,999	
	6 = 25,000 - 49,999	
	7 = 50,000 - 99,999	
	8 = 100,000 and over	
Col. 27	<u>Rate of Population Growth (1970/1960)</u>	15
	1 = Decline	
	2 = Stationary	
	3 = 0-49%	
	4 = 50-99%	
	5 = 100-499%	
	6 = 500% and more	

Col. 28	<u>Use of the Waterfront</u>	16
	0 = Not applicable	
	1 = Commercial	
	2 = Residential	
	3 = Industrial	
	4 = Recreational	
	5 = Future Development	
	6 = Combination of the Above	
Col. 29	<u>Use of the Proceeds (Detailed)</u>	17
	1 = New	
	2 = Extension or Addition	
	3 = Remodeling or Alteration	
	4 = New, Extension and Remodeling	
	5 = New and Extension	
	6 = New and Remodeling	
	7 = Extension and Remodeling	
	8 = Acquisition	
	9 = Acquisition and Any of the above	
Col. 30-31	<u>Description of the Project</u>	18
	01 = Treatment	
	02 = Collection, Sanitary	
	03 = Disposal, Sanitary	
	04 = Drainage	
	05 = 01 and 02	
	06 = 01 and 03	
	07 = 01 and 04	
	08 = 02 and 03	
	09 = 02 and 06	
	10 = 03 and 04	
	11 = 01 and 02 and 03	
	12 = 01 and 03 and 04	
	13 = 02 and 03 and 04	
	14 = 01 and 02 and 03 and 04	
	15 = 01 and 02 and 04	

Col. 32-33	<u>Analysis of the Wording of the Referendum</u>	19
	01 = Positive Wording	
	02 = Existence of description of the improvement more detailed than in Col. 30-31.	
	03 = Indication of the location of the improvement.	
	04 = Explanation of the means of financing.	
	05 = 01 and 02	
	06 = 01 and 03	
	07 = 01 and 04	
	08 = 02 and 03	
	09 = 02 and 04	
	10 = 03 and 04	
	11 = 01 and 02 and 03	
	12 = 01 and 02 and 04	
	13 = 02 and 03 and 04	
	14 = 01 and 02 and 03 and 04	
	15 = None 01, 02, 03, 04	
Col. 34	<u>Way the Issue was Offered to the Voters</u>	20
	1 = Single Issue (Yes to Question 4)	
	2 = Combined Issue (Yes to Question 5a)	
	3 = Split Issue (Yes to Question 5b)	
Col. 35	<u>Outcome of the Vote</u>	21
	0 = 0 - 9%	
	1 = 10 - 19%	
	2 = 20 - 29%	
	3 = 30 - 39%	
	4 = 40 - 49%	
	5 = 50 - 59%	
	6 = 60 - 69%	
	7 = 70 - 79%	
	8 = 80 - 89%	
	9 = 90 - 100%	

Col. 36	<u>Percentage Required to Pass</u>	22
	1 = 50%	
	2 = 67%	
Col. 37	<u>(If combined issue) Other Issues Presented in the Same Package</u>	23
	1 = Streets	
	2 = Water	
	3 = Other Sewer-drainage	
	4 = Fire	
	5 = Law Enforcement	
	6 = Hospitals, School, Other Buildings	
	7 = Parks	
	8 = More than one of the above	
Col. 38	<u>(If split issue) Outcome for the Different Issues</u>	24
	1 = All passed	
	2 = All failed	
	3 = Part passed and government intends to use the proceeds	
	4 = Part passed and government does not intend to use the proceeds	
	5 = Part passed and government uncertain to use the proceeds	
Col. 39	<u>Existence of Candidates for Public Office Elected in the Same Election</u>	25
	1 = No	
	2 = Yes, Local Election (primary, general, special).	
	3 = Yes, State Election (primary, general, special).	
	4 = Yes, National Election (primary, general, special).	
	5 = Yes, others.	

Col. 40	<u>Other Issues Presented to Vote the Same Day (but not combined with the project at hand)</u>	26
	1 = Streets 2 = Water 3 = Other Sewer /Drainage 4 = Fire 5 = Law Enforcement 6 = Hospital, School Other Building 7 = Parks 8 = More than One of the Above 9 = None of the above	
Col. 41	<u>Of the total number of issues on the ballot, what percentage received a significantly higher percentage of favorables votes (5% or more) than the issue at hand did?</u>	27
	0 = 0 - 9% 1 = 10 - 19% 2 = 20 - 29% 3 = 30 - 39% 4 = 40 - 49% 5 = 50 - 59% 6 = 60 - 69% 7 = 70 - 79% 8 = 80 - 89% 9 = 90 - 100%	
Col. 42	<u>Same Question as Col. 41, but replace "higher" by "lower"</u>	28
	Same code: 0 = 0 - 9% 1 = 10 - 19% 2 = 20 - 29% 3 = 30 - 39% 4 = 40 - 49% 5 = 50 - 59% 6 = 60 - 69%	

Col. 42 (cont.)	<u>Same Question as Col. 421, but replace</u> <u>"higher" by "lower"</u> 7 = 70 - 79% 8 = 80 - 89% 9 = 90 - 100%	
Col. 43	<u>What issue received the highest vote for?</u> 1 = Streets 2 = Water 3 = Other Sewer /Drainage 4 = Fire 5 = Law Enforcement 6 = Hospitals, Schools, Other Buildings 7 = Parks 8 = More than One of the Above 9 = The Issue at Hand	29
Col. 44	<u>What issue received the lowest vote for?</u> <u>Same code as in Column 43.</u>	30
Col. 45	<u>Percentage of Population Registered</u> Usual code for percentages as above: [0 - 9] with 0 = 0 - 9% 1 = 10 - 19% etc	31
Col. 46	<u>Largest Turnout for any Purpose in that</u> <u>Election</u> Usual code for percentages as above: [0 - 9] with 0 = 0 - 9% 1 = 10 - 19% etc	32

Data from the Newspaper
Reporter Data Sheet

Col. 47	<u>Existence of Pressure Groups for the Issue</u>	33
	1 = Yes	
	2 = No	
Col. 48	<u>Importance of These Groups in the Outcome</u>	34
	1 = Yes	
	2 = No	
Col. 49	<u>Existence of Pressure Groups Against the Issue</u>	35
	1 = Yes	
	2 = No	
Col. 50	<u>Importance of These Groups for the Outcome</u>	36
	1 = Yes	
	2 = No	
Col. 51	<u>Were These Groups Partisan in Nature</u>	37
	1 = No	
	2 = Yes, Republican	
	3 = Yes, Democrat	
	4 = Yes, Others	
	5 = Yes, Republican and Democrat	
Col. 52	<u>Role Played by Newspapers during the Campaign</u>	38
	1 = Important For	
	2 = Important Against	
	3 = Important For and Against	
	4 = Low For	
	5 = Low Against	
	6 = Low For and Against	
	7 = None	

Col. 53	<u>Role Played by Other Media during the Campaign</u> 1 = Important For 2 = Important Against 3 = Important For and Against 4 = Low For 5 = Low Against 6 = Low For and Against 7 = None	39
Col. 54-55	<u>Expressed Position Relative to the Project:</u> <u>Local Officials</u> 00 = None 01 = Pro-Money Contribution 02 = Pro-Door to Door 03 = Pro-Speeches 04 = Pro-Public Endorsement 05 = Pro-Leaflet, Newspaper Ad 06 = Pro-Other 07 = Pro-Combinations of 2 or 3 of the above 08 = Pro-Combinations of more than 3 of the above 09 = Against-Money Contribution 10 = Against-Door to Door 11 = Against-Speeches 12 = Against-Public Endorsements 13 = Against-Leaflet, Newspaper Ad 14 = Against-Other 15 = Against-Combination of 2 or 3 of the above 16 = Against-Combinations of more than 3 of the above 17 = Pro and Against - Money Contribution 18 = Pro and Against - Door to Door 19 = Pro and Against - Speeches 20 = Pro and Against - Public Endorsement 21 = Pro and Against - Leaflet, Newspaper Ad	40

Col. 54-55
(cont.)

Expressed Position Relative to the Project:
Local Officials

22 = Pro and Against - Other

23 = Pro and Against - Combination of 2 or 3
of the above

24 = Pro and Against - Combination of more
than 3 of the above

Col. 56-57

Expressed Position Relative to the Project:

Doctors 41

[Same code as for Col. 54-55]

Col. 58-59

"

Politicians and 42
Party Organ-
izations

Col. 60-61

"

State Officials 43

Col. 62-63

"

Chamber of 44
Commerce

Col. 64-65

"

Other Local 45
Governing Bodies

Col. 66-67

"

Ad hoc Groups 46

Col. 68-69

"

Clergy 47

Col. 70-71

"

League of 48
Women Voters

Col. 72-73

"

School and Uni- 49
versity Groups

Col. 74-75

"

PTA 50

Col. 75-76

"

Others 51

CARD 2

Identification

Col. 1-5

Alphanumeric: Location of the referenda
(as in card 1)

Col. 6-7	Numerical Identification of the referenda (as in card 1)
Col. 8-9	State where the referenda were held (as in card 1)
Col. 10	Card Number: 2

Data from Newspaper
Reporter Data Sheet
(continued)

Col. 11	<u>Use of Newspaper Ads</u>	52
	1 = Yes	
	2 = No	
Col. 12	<u>Use of Radio and TV Ads</u>	53
	1 = Yes	
	2 = No	
Col. 13	<u>Use of Telephone Surveys</u>	54
	1 = Yes	
	2 = No	
Col. 14	<u>Transportation Offered to Voters</u>	55
	1 = Yes	
	2 = No	
Col. 15	<u>Advertisement Mode: Literature, Brochures, Leaflets</u>	56
	1 = Yes	
	2 = No	
Col. 16	<u>Advertisement Mode: Film</u>	57
	1 = Yes	
	2 = No	
Col. 17	<u>Advertisement Mode: Posters</u>	58
	1 = Yes	
	2 = No	

Col. 18	<u>Advertisement Mode: News Stories</u> 1 = Yes 2 = No	59
Col. 19	<u>Advertisement Mode: Letters to Editor</u> 1 = Yes 2 = No	60
Col. 20	<u>Advertisement Mode: Speeches and Meetings</u> 1 = Yes 2 = No	61
Col. 21	<u>Advertisement Mode: Door to Door Canvassing</u> 1 = Yes 2 = No	62
Col. 22	<u>Criticism: Cost and Size of Project</u> 1 = Too Large 2 = Too Small 3 = Both 4 = Not Raised	63
Col. 23	<u>Criticism: Taxes, Fees, and Assessment</u> 1 = Increase in Taxes 2 = Increase in Sewer Fees 3 = Type of Assessment 4 = 1 and 2 5 = 1 and 3 6 = 2 and 3 7 = 1 and 2 and 3 8 = Not Raised	64
Col. 24	<u>Criticism: Source of Revenue</u> 1 = Raised 2 = Not Raised	65

Col. 25	<u>Criticism: Allocation of Costs Benefits</u> 1 = Raised 2 = Not Raised	66
Col. 26	<u>Criticism: Timing of Construction</u> 1 = Raised 2 = Not Raised	67
Col. 27	<u>Criticism: Location of Improvements</u> 1 = Treatment Plant 2 = Sewer and Drainage 3 = Both 4 = Not Raised	68
Col. 28	<u>Criticism: Not Necessary</u> 1 = Raised 2 = Not Raised	69
Col. 29	<u>Criticism: Opposed to Growth</u> 1 = Raised 2 = Not Raised	70
Col. 30	<u>Criticism: Opposed to State or Federal Interference</u> 1 = Raised 2 = Not Raised	71
Col. 31	<u>Criticism: Local versus Regional Management</u> 1 = Favor of Local Authority 2 = Favor of Regional Government 3 = Both 4 = Not Raised	72
Col. 32	<u>Criticism: Distrust of Local Officials</u> 1 = Raised 2 = Not Raised	73

Col. 33	<u>Criticism: Alternative is Better</u>	74
	1 = Raised	
	2 = Not Raised	
Col. 34	<u>Criticism: Administration Did Not Give Enough Information</u>	75
	1 = Raised	
	2 = Not Raised	

Data from City
Comptroller Sheet

Col. 35	<u>Total Cost of the Project (Dollars)</u>	76
	1 = 0 -99,999	
	2 = 100,000 - 499,999	
	3 = 500,000 - 999,999	
	4 = 1,000,000 - 4,999,999	
	5 = 5,000,000 and over	
Col. 36	<u>Bonds Repaid by User Charges</u>	77
	1 = Yes	
	2 = No	
Col. 37	<u>Bonds Repaid by Increased Taxes</u>	78
	1 = Yes	
	2 = No	
Col. 38	<u>Bonds Repaid by Increased Taxes Until Facility Can Be Supported by Users Charges</u>	79
	1 = Yes	
	2 = No	
Col. 39	<u>Bonds Repaid by Special Assessment</u>	80
	1 = Yes	
	2 = No	
Col. 40	<u>Bonds Repaid by State Grants</u>	81
	1 = Yes	
	2 = No	

Col. 41	<u>Bonds Repaid by Federal Grants</u>	82
	1 = Yes	
	2 = No	
Col. 42	<u>Current Tax Rate (\$ per \$1,000 of Assessed Valuation)</u>	83
	1 = 1-24	
	2 = 25-49	
	3 = 50-74	
	4 = 75-99	
	5 = 100-124	
	6 = 125-149	
	7 = 150-174	
	8 = 175-199	
	9 = 200 and more	
Col. 43	<u>Tax Rate Increase from 1966 to 1970</u>	84
	0 = 0 - 9%	
	1 = 10 - 19%	
	2 = 20 - 29%	
	3 = 30 - 39%	
	4 = 40 - 49%	
	5 = 50 - 59%	
	6 = 60 - 69%	
	7 = 70 - 79%	
	8 = 80 - 89%	
	9 = 90 - 100%	
Col. 44	<u>Proportion of Project Costs Repaid by Increased Taxes</u>	85
	Usual code for percentages as above	
	[0 - 9]	

Col. 45	<u>Amount of Project Costs Repaid by Increased Taxes</u>	86
	1 = 0 - 499,000	
	2 = 499,000 to 999,000	
	3 = 1,000,000 to 9,900,000	
	4 = 10,000,000 to 24,900,000	
	5 = 25,000,000 to 49,900,000	
	6 = 50,000,000 to 99,900,000	
	7 = 100,000,000 to 499,900,000	
	8 = 500,000,000 to 999,900,000	
	9 = 1,000,000,000 and over	
Col. 46	<u>Proportion of Project Costs Paid with State Funds</u>	87
	Usual Code for Percentages [0 to 9].	
Col. 47	<u>Proportion of Project Costs Paid with Federal Funds</u>	88
	Usual Code for Percentages [0 to 9].	
Col. 48	<u>Total Indebtedness at Beginning of 1970 (Dollars)</u>	89
	1 = 0 to 49,000	
	2 = 50,000 to 99,000	
	3 = 100,000 to 900,000	
	4 = 1,000,000 to 2,400,000	
	5 = 2,500,000 to 4,900,000	
	6 = 5,000,000 to 9,900,000	
	7 = 10,000,000 to 49,900,000	
	8 = 50,000,000 to 99,900,000	
	9 = 100,000,000 and over	
Col. 49	<u>% Increase of Decrease of Indebtedness Between 1966-1970</u>	90
	1 = High Decline (20% or more)	
	2 = Decline	
	3 = Stationary (less than 5%)	
	4 = Increase	
	5 = High Increase (20% or more)	

Col. 50-51	<u>Portion of Operating Budget Repaying the Bonds</u>	91
	01 = 0 to 2.4	
	02 = 2.5 to 4.9	
	03 = 5 to 7.4	
	04 = 7.5 to 9.9	
	05 = 10 to 12.4	
	06 = 12.5 to 14.9	
	07 = 15 to 17.4	
	08 = 17.5 to 19.9	
	09 = 20 to 29.9	
	10 = 30 to 39.9	
	11 = 40 to 39.9	
	12 = 50 and above	
Col. 52	<u>Is there a debt limit?</u>	92
	1 = No	
	2 = Yes, but water or sewers excluded	
	3 = Yes and water or sewers included	
Col. 53	<u>Who set the debt limit?</u>	93
	1 = State Constitution	
	2 = State Law	
	3 = Local Charter	
	4 = Local Law	
Col. 54	<u>What would passage of bond mean in terms of approaching debt limit?</u>	94
	1 = Nothing	
	2 = Close	
	3 = Exceed	

Col. 55-56	<u>Current Credit Rating</u>	95
	01 = A	
	02 = AA	
	03 = AAA	
	04 = AAAA	
	05 = B	
	06 = BA	
	07 = BAA	
Col. 57	<u>Rating System</u>	96
	1 = Moody's	
	2 = Standard and Poor	
	3 = Both	
	4 = Others	
	5 = None	
	0 = Not Applicable	
Data from Census City Planner Data Sheet		
Col. 58	<u>Median Family Income (Dollars)</u>	97
	1 = 0 to 2,999	
	2 = 3,000 to 3,999	
	3 = 4,000 to 4,999	
	4 = 5,000 to 5,999	
	5 = 6,000 to 6,999	
	6 = 7,000 to 7,999	
	7 = 8,000 and above	
Col. 59	<u>Proportion of Families Whose Income Is Less Than \$3,000/Year</u>	98
	Usual Code for Proportions [0 to 9].	

Col. 60	<u>Proportion of Families Whose Income Is Between \$3,000 and \$10,000/Year</u>	99
	Usual Code for Proportions [0 to 9].	
Col. 61	<u>Proportion of Families Whose Income Is Higher than \$10,000/Year</u>	100
	Usual Code for Proportions [0 to 9].	
Col. 62	<u>Proportion of Population of Age Between 21 and 35</u>	101
	Usual Code for Proportions [0 to 9].	
Col. 63	<u>Proportion of Population of Age Over 65</u>	102
	Usual Code for Proportions [0 to 9].	
Col. 64	<u>Proportion of Population Non-White</u>	103
	Usual Code for Proportions [0 to 9].	
Col. 65	<u>Proportion of Population Who Was Already Resident in the Area in 1955</u>	104
	Usual Code for Proportions [0 to 9].	
Col. 66	<u>Proportion of Single Family Housing Units</u>	105
	Usual Code for Proportions [0 to 9].	
Col. 67	<u>Proportion of Owner Occupied Housing Units</u>	106
	Usual Code for Proportions [0 to 9].	
CANCELLED	<u>Most Serious Growth Problem Facing the Area</u>	
	1 = Housing	
	2 = Transportation	
	3 = Schools	
	4 = Hospitals	
	5 = Water	
	6 = Sewers	
	7 = Lack of Economic Base	
	8 = Others	
	9 = None	

Col. 68-70	BLANK	
Col. 71-72	State where referendum was held (same code as col. 8-9)	107
Data from City Engineer Data Sheet		
Col. 73	<u>Availability of Map to Voters</u> 1 = Yes 2 = No	108
Col. 74	<u>Project Aimed at Counteracting Water Pollution Problem</u> 1 = No 2 = Present 3 = Future 4 = Present and Future	109
Col. 75	<u>Special Topographical Conditions Contributing to the Need of the Project</u> 1 = Yes 2 = No	110
Col. 76	<u>Special Topographical Problems Associated with the Project</u> 1 = Yes 2 = No	111
Col. 77	<u>Land Development Created Project Need?</u> 1 = No 2 = Yes, Residential 3 = Yes, Industrial 4 = Yes, Commercial 5 = Yes, 2 and 3 6 = Yes, 2 and 4 7 = Yes, 3 and 4 8 = Yes, 2 and 3 and 4	112

Col. 78	<u>Will Project Serve Future Development Area?</u>	113
	1 = No	
	2 = Yes, Residential	
	3 = Yes, Industrial	
	4 = Yes, Commercial	
	5 = Yes, 2 and 3	
	6 = Yes, 2 and 4	
	7 = Yes, 3 and 4	
	8 = Yes, 2 and 3 and 4	
Col. 79	<u>Federal Regulations Associated with Project</u>	114
	1 = No	
	2 = Yes, Technical	
	3 = Yes, Financial	
	4 = Yes, Both	
	5 = Yes, Others	
Col. 80	<u>Local Regulations Associated with Project</u>	115
	1 = No	
	2 = Yes, Technical	
	3 = Yes, Financial	
	4 = Yes, Both	
	5 = Yes, Others	

DATA FILE

INTERVIEW GUIDES

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(This will replace the City Assessor Data Sheet.)

ABT ASSOCIATES INC.
55 WHEELER STREET, CAMBRIDGE, MASSACHUSETTS 02138
TELEPHONE • AREA 617-492-7100

CITY PLANNER DATA SHEET

CENSUS DATA

The following information is to be collected for the primary governmental unit under study. If it is available with more geographic detail, then collect it as well. Most governments will have 1960 census data, and some will have more recent data. Gather 1960 data for all cities; gather more recent data when available and specify the date and source of the more recent data.

1. Population

1950 census _____

1960 census _____

1970 census (if available) _____

Other recent census (specify) _____

2. Median Family Income _____

3. Income Distribution:

Low: Less than \$3,000/year _____

Medium: \$3,000 to \$10,000 _____

High: \$10,000 to \$20,000 _____

Very High: Over \$20,000 _____

4. Age

Median Age _____

Percent Over 65 _____

Age Distribution (if available):

<u>Category</u>	<u>Percent</u>
0 - 4	_____
5 - 9	_____
10 - 14	_____
15 - 19	_____
20 - 24	_____
25 - 29	_____
30 - 34	_____
35 - 39	_____
40 - 44	_____
45 - 49	_____
50 - 54	_____
55 - 59	_____
60 - 64	_____
65 - 69	_____
70 - 74	_____
75 and over	_____

5. Percent non-white _____

6. Percent foreign - born _____

7. Type of Housing
Number of single-family units _____
Number of multi-family units _____
Number of owner-occupied units _____
Number of rental units _____
8. Percentage of unemployment _____
9. Occupation classification:
_____ Percent white collar
_____ Percent blue-collar
10. What is the most serious growth problem facing the primary governmental unit (if any)?
_____ Housing
_____ Transportation
_____ Schools
_____ Hospitals
_____ Water
_____ Sewers
_____ None
_____ Others (Specify)
11. What is the tax rate for the primary governmental unit (in dollars per \$1,000 assessed valuation)?

11. What is the tax rate for neighboring governmental units?
(in dollars per \$1,000 assessed valuation)?

<u>Name of Governmental Unit</u>	<u>Tax rate</u>
-----	-----
-----	-----
-----	-----
-----	-----
-----	-----

12. Have there been any recent increases in taxes in neighboring governmental units? If yes, specify.

13. Get copy of 701 plan (or master plan).

DATA SHEET FOR CITY ENGINEER

1. What is the exact nature of the improvements to be financed by the bonds?

2. Where were the improvements to be located?
 - a. (Get map if possible.)
 - b. Was a map showing the location of the improvements available to the voters before the referendum?

----- Yes

----- No

3. Was this project designed to counteract a present or future water pollution problem?

----- Present

----- Future

----- No

4. Are there any topographical conditions which contribute to the need for the project? Specify.

5. Are there any topographical conditions which affect the design of the project? Specify. (Obtain a topographical map of the area if available.)

6. Was the need for the project created by recent land development?

_____ Yes

_____ No

If yes:

- a. What sort of development?

_____ Residential

_____ Industrial

_____ Commercial

- b. Location of the development.

7. Is the project designed to serve an area where future development will be accommodated?

_____ Yes

_____ No

If yes:

- a. What sort of development?

_____ Residential

_____ Industrial

_____ Commercial

8. Are there any federal regulations or requirements associated with any characteristic of the project: Specify.

_____ Yes

_____ No

_____ Technical

_____ Financial

_____ Others

9. Are there any state or local regulations or requirements in connection with any characteristic of the project?

_____ Yes

_____ No

_____ Technical

_____ Financial

_____ Other

Specify.

ABT ASSOCIATES INC.
55 WHEELER STREET, CAMBRIDGE, MASSACHUSETTS 02138
TELEPHONE • AREA 617-492-7100

CITY CONTROLLER -- DATA SHEET

1. What is the total cost of the project proposed to the voters in this bond election? \$ _____
2. How will money be raised to repay the bonds?
_____ user charges
_____ increased taxes
_____ increased taxes until facility can be supported by user charges
_____ Special assessment
_____ State grants
_____ Federal grants
3. What is the tax rate in your town currently? \$ _____
per /\$1,000 of assessed valuation.
[If rate is different for property, schools, etc., list all amounts.]
4. What has the tax rate been for the past four years?
1969 \$ _____ /\$1000 assessed valuation

1968

1967

1966

[Note year of bond election with *.]

10. Total cost of the project _____

11. Portion of the cost which is paid for by federal grants

12. Portion of the cost which is paid for by state grants

5. What portion of the cost will be repaid with increased taxes?
\$ _____ % of the total project cost
6. What is the most recent total assessed valuation of the primary governmental unit?
\$ _____ Date _____
7. How much of the total project would be paid for with State or Federal funds?
State \$ _____
Federal \$ _____
8. Can you give me a general idea of the total amount of State and Federal funding in the town, exclusive of compensation to individuals, such as social security or welfare payments?
\$ _____
9. \$ _____ of outside funding/assessed value/person, from questions 6 and 8 (controller) and 1 (City Planner).
10. What was the total indebtedness of (primary governmental unit) as of the beginning of the 1970 fiscal year?
1970 \$ _____
11. How does this compare with previous years?
1969 -- \$ _____
1968 -- \$ _____
1967 -- \$ _____
1966 -- \$ _____

12. How much of the total operating budget was allocated for repaying bonds and interest on them at the time of the bond election?
\$ _____
13. Is there a debt limit imposed on (the primary governmental unit)?

Are water and sewer projects regulated by this limit? _____
14. If yes to 13, by whom was the limit set? _____
15. If yes to 13, what would passage of this bond mean in terms of approaching this limit?
16. What is (the primary governmental unit's) current credit rating?
Whose system?
17. Is there a prospectus available describing these bonds or any others recently issued by the (primary governmental unit)?
[If so, request it.]

CITY CLERK -- DATA SHEET

1. What is the largest governmental unit, the population of which voted on the referendum?

_____ city
_____ county
_____ district
_____ township
_____ statutory authority
_____ sewer district
_____ other (specify)

NOTE: In all the following questions, we shall refer to this unit as the primary governmental unit.

2. If the answer to question 1 is "city" or "town":

What is the type of this primary governmental unit?

_____ strong mayor-council
_____ weak mayor-council
_____ council-manager
_____ commission
_____ other (specify)

3. Are there independent governmental units within the boundaries of the primary unit?

_____ yes
_____ no

4. Is the population which will be served by the sewers project the same as the population which pays for the bonds?

_____ Yes

_____ No

Is it the same as the population which voted on the referendum?

_____ Yes

_____ No

5. What is the type of election of the government of the primary governmental unit?

_____ partisan

_____ non-partisan

_____ ward

_____ at-large

_____ ward and at-large

6. Population of the primary governmental unit

1950 Census _____

1960 Census _____

1970 Census (if available) _____

1970 other source (specify) _____

7. The use of the waterfront

_____ not applicable

_____ commercial

_____ residential

_____ industrial

REFERENDUM CHARACTERISTICS

1. Date of the referendum

Month _____ Day _____ Year _____

2. Use of the proceeds:

2.1 Type of construction

_____ new
_____ extension or addition
_____ remodeling or alteration

2.2 Description

a [_____ sewer
_____ water and sewer
_____ storm sewer, drainage sewer, drainage district

b [_____ treatment plant
_____ outfall sewer
_____ intercepting sewer
_____ waste stabilization ponds
_____ other (specify)

3. Wording of the referendum: [Attach.]

Was the meaning clear from the wording?

_____ Yes

_____ No

Other characteristics of the referendum (stated in negative terms, etc.)

4. Was the sewer (drainage) project offered to the voters as a single issue? _____ Yes _____ No

[If NO, skip to Question 5.
If YES, what was the outcome of the vote?]

Total votes cast _____

Total for _____

Total against _____

Total blank _____

[If the answer to Question 4 was NO, or
if it were YES, but the wording of the
referendum indicated that it was not a
single issue, ask Question 5.]

5. (a) Sewer (drainage) projects like the one which was voted on in (name of the primary governmental unit) are sometimes part of a larger package of capital improvements (like hospitals, roads, parks, drainage improvements, etc.) which are presented to the voters as a single bond issue. Was this the case in (the name of the primary governmental unit)?

_____ Yes

_____ No

If YES, what was the wording and outcome of the vote:

Wording:

Outcome:

Total Votes cast _____

Total for _____

Total against _____

Total blank _____

[If answer to 5(a) was YES, skip part (b)
and go on to question 6.]

5. (b) Sewer (drainage) projects like the one which was voted on in (name of the primary governmental unit) are sometimes divided into several separate bond issues so that the voters may vote on each of the parts of the project (e. g., treatment plant, interceptor) separately. Was this the case in (name of the primary governmental unit)? If YES, what was the wording and outcome of the vote for each of these issues:

Wording of Issue 1

Wording of Issue 2

Wording of Issue 3

Wording of Issue 4

Outcome:

	Issue 1	Issue 2	Issue 3	Issue 4
Total votes cast	_____	_____	_____	_____
Total for	_____	_____	_____	_____
Total gagainst	_____	_____	_____	_____
Total blank	_____	_____	_____	_____

6. Were there candidates for public office elected in this election?

_____ Yes

_____ No

_____ Local election (primary, general, special)

_____ State election (primary, general, special)

_____ National election (primary, general, special)

_____ Others

7. Were there any other bond issues (not related to sewers or drainage) on the ballot at the same time as this sewer (drainage) bond issue?

If YES, what was the wording and outcome of the vote for each of these bond issues:

Wording for Issue 1

Wording for Issue 2

Wording for Issue 3

Wording for issue 4

Wording for Issue 4

Outcome:

	Issue 1	Issue 2	Issue 3	Issue 4
Total votes cast	_____	_____	_____	_____
Total for	_____	_____	_____	_____
Total against	_____	_____	_____	_____
Total blank	_____	_____	_____	_____

8. Number of voters registered and eligible to vote on the referendum? _____

9. Largest number of votes cast for any purpose in that election.

10. Number of voters registered in the different parties on the day of the election.

----- Republican

----- Democrat

----- Other (specify)

11. Same question for January 1970

----- Republican

----- Democrat

----- Other (specify)

12. Same question for November, 1968.

----- Republican

----- Democrat

----- Other (specify)

13. Same question for January, 1965.

----- Republican

----- Democrat

----- Other (specify)

STUDY OF WATER POLLUTION BOND REFERENDA

NEWSPAPER REPORTER - DATA SHEET

Campaign Characteristics

1. Did pressure groups for the passage of the bond issue exist?
_____ Yes
_____ No
2. Were they of major importance in the passage or the rejection of the bond?
_____ Yes
_____ No
3. Did pressure groups against the passage of the bond issue exist?
_____ Yes
_____ No
4. Were they of major importance in the passage or rejection of the bond?
_____ Yes
_____ No
5. Were these groups partisan in nature?
6. What was the role played by newspapers, radio, and television during the campaign?

7. List the expressed position relative to the project of

GROUP	PRO	CON	PARTY AFFILIATION
a. Local officials	_____	_____	_____
b. Doctors	_____	_____	_____
c. Politicians & party organizations	_____	_____	_____
d. State officials	_____	_____	_____

	GROUP	PRO	CON	ROLE	PARTY AFFILIATION
e.	Chamber of Commerce	_____	_____	_____	_____
f.	other local governing bodies	_____	_____	_____	_____
g.	water distribution networks & agencies	_____	_____	_____	_____
h.	clergy	_____	_____	_____	_____
i.	League of Women Voters	_____	_____	_____	_____
j.	school & university groups	_____	_____	_____	_____
k.	PTA	_____	_____	_____	_____
l.	other	_____	_____	_____	_____

NOTE: THE CODE FOR ROLE MEASUREMENT FOR THE ABOVE QUESTION IS:

- | | | |
|-----|-----------------------|--------------------------|
| PRO | 1. Money contribution | 4. Public Endorsement |
| & | 2. Door to door | 5. Leaflet, newspaper ad |
| CON | 3. Speeches | 6. Other |

8. Were newspaper advertisements used?

_____ Yes

_____ No

9. Were radio and television advertisements used?

_____ Yes

_____ No

10. Were telephone surveys used?

_____ Yes

_____ No

11. Was transportation offered to the polls for the voters?
_____ Yes
_____ No
12. Other methods of advertisement used.
13. How much money did each group spend on newspaper advertisements?
14. How much money did each groups spent on television or radio advertisements?
15. How much money was spent in other ways?
16. If possible, try to obtain a copy of the advertising used during the campaign.
17. What were the issues offered as criticism or opposition to the bond?
18. Were the voters aware of the real issues?
_____ Yes
_____ No

DATA SHEET FOR CITY ENGINEER

1. Was this project designed to counteract a present or a future pollution problem?

_____ Present

_____ Future

_____ No

2. Is there any other growth problem:

_____ Housing

_____ Transportation

_____ Water

_____ School

_____ Hospitals

_____ None

_____ Others

3. Is the project designed to serve a zone where

_____ Industrial

_____ Commercial

_____ Residential

growth will be accommodated?

4. Are there any federal regulations or requirements associated with any characteristic of the project: Specify.

_____ Yes _____ No

_____ Technical

_____ Financial

_____ Others

5. Are there any state or local regulations or requirements in connection with any characteristic of the project?

_____ Yes _____ No

_____ Technical

_____ Financial

_____ Other

Specify.

6. Location of improvements (on map) (for in-depth studies, essentially).
7. Total cost of the project.
8. Portion of the cost which is paid for by increased taxes.
Specify type of taxes.
9. Portion of the cost which is paid for by special assessment.
10. Portion of the cost which is paid for by federal grants.
11. Portion of the cost which is paid for by state grants.
12. Copy of 701 plan of the city.

APPENDIX E
IN-DEPTH CASE STUDIES

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ATHOL, MASSACHUSETTS

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ATHOL

On March 3, 1969, the Town Meeting of Athol, Massachusetts approved unanimously, the following article:

Article 30, VOTED, unanimously: That \$350,000.00 (three hundred fifty thousand dollars) is appropriated for the construction of sewerage systems and sewage treatment and disposal facilities; that to raise this appropriation \$50,000.00 (fifty thousand dollars) is appropriated from the stabilization fund and the treasurer with the approval of the selectmen is authorized to borrow \$300,000.00 (three hundred thousand dollars) under Chapter 44 of the General Laws as amended; that the board of public works are authorized to contract for Federal or State aid which shall be spent for the project and that such aid may be spent in addition to the amount appropriated herein provided that no amount shall be borrowed under this vote in excess of the amount necessary, with other available funds, to pay the total project costs, all as then estimated by the selectmen, and that the board of public works are authorized to acquire necessary land, rights of way and easement for this project.

This was not technically a referendum. Nevertheless, because of the similarities between referenda and town meetings, it is included in our sample.³⁰

Because of the prevalence of the town meeting form of government in the New England states (and the infrequency of referenda in these states), we were pleased to have an opportunity to analyze this governmental mechanism and its impact on community decision-making on the issue of sewers.

Population

The primary governmental unit involved in this vote is Athol, Massachusetts, a town of approximately 12,000 persons located about 75 miles

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west and slightly north of Boston. One striking feature of the town is its slow rate of population growth. In 1950, the population was 11,554; in 1960, it was 11,637. Although 1970 data are not yet available, respondents expect the 1970 population to be relatively unchanged from 1960.

The population stability is associated with some other interesting feature of the community. For example, as the Athol Master Plan pointed out:

Athol is an unusually self-contained community. The great majority of its resident workers have jobs within Athol (90% of its residents who work in manufacturing are employed within Athol), and the majority of the labor force which staffs Athol jobs come from Athol (about 75% in manufacturing). The bulk of the shopping done by Athol residents is done within Athol, and few from outside of Athol shop there. The regional junior and senior high schools are in Athol, with less than 10% of their enrollment from outside of the town. Lack of nearby urban centers, poor access north-south, and only fair access east-west accounts for this condition, common in other areas many years ago, but vanishing³¹ in this age of super metropolitan areas and influences.

The lack of population growth correlates with the fact that certain attributes of the town's population have remained virtually unchanged over the past 20 years. For example, the town has never had very many non-whites; only six appear in the 1960 census. Also, most residents have lived in Athol most of their lives. According to the 1960 census, 92% of the residents in 1960 had also been residents (or residents of nearby communities) in 1955. Given this stability, the only significant change in population characteristics is that the residents have gotten older. In fact, the age distribution in Athol is quite dissimilar from most of the other communities in our sample--particularly those which are experiencing rapid growth. Only 15% of the entire population of Athol was between the ages of 20 and 34, and another 15% of the population was between 60 and 75. Furthermore, Athol's median age was 35--nearly 10 years older than most cities in our sample. (Data showing the distribution of Athol residents by age appears in Table 1). According

to the town's Master Plan, the decade of 1950-1960 saw an increase in the number of children and an increase in the number of persons of retirement age, but a decrease in the number of persons of working age.³²

Table 1. Distribution of Athol Residents by Age	
<u>Age</u>	<u>Number of Residents</u>
0-4	1028
5-9	898
10-14	908
15-19	688
20-24	459
25-29	478
30-34	522
35-39	610
40-44	729
45-49	672
50-54	640
55-59	548
60-64	535
65-69	495
70-74	423
75-79	278
80-84	142
85 and over	108
Source: 1960 Census	

Athol is not a wealthy town. The median family income in 1960 was \$5,400. As the data in Table 2 show, a large portion of the population is concentrated in the \$3,000 to \$7,000 bracket. Also, it is significant to note that only 15% of the population have family incomes of less than \$3,000, while only 12% have incomes over \$10,000.

In spite of this low family income, there is relatively little reported unemployment in Athol. Unlike neighboring New England towns which have relied on the declining industries of textiles and shoes, Athol has a stable manufacturing base. Its two major employers, UTD Corporation and L. S. Starrett Company, both tool manufacturers, have provided the town with a stable source of employment. At the same time, the peculiar

nature of the employment in these companies also contributes to the low average family income. One important characteristic of these industries (and hence of the town in general) is that they do not provide employment opportunities for women. Hence, few women in Athol work, and few even look for employment. Since looking for work is a prerequisite for being included in data on unemployment, the unemployment data for Athol underestimate the number of unemployed women. This results in a lower median family income in Athol than in other manufacturing towns where women are more likely to be employed.

Table 2. Family Income Distribution for Residents of Athol

<u>Family Income</u>	<u>Number of Families</u>
0 - \$ 999	62
\$ 1,000 - \$ 1,999	123
\$ 2,000 - \$ 2,999	229
\$ 3,000 - \$ 3,999	319
\$ 4,000 - \$ 4,999	466
\$ 5,000 - \$ 5,999	425
\$ 6,000 - \$ 6,999	350
\$ 7,000 - \$ 7,999	250
\$ 8,000 - \$ 8,999	250
\$ 9,000 - \$ 9,999	103
\$10,000 - \$14,999	164
\$15,000 - \$24,999	51
\$25,000 and above	8

Source: 1960 Census

A bare majority of all housing units in Athol are single-family, owner-occupied. Only 55.3% of all units are single-family, and only 60% of all units are owner-occupied. This is not unusual for factory communities in Massachusetts, where two-, three-, and four-family houses (with the owner residing in one of the units) is common. In Athol, 21.7% of all housing units are two-family; 13.0% are three- and four-family; and only 9.9% are five-family or more.

In spite of the low median family income, the city's financial position is not particularly bad. As mentioned earlier, Athol has a large, stable industrial base. Of the \$15 million in assessed valuation in 1969, UTD Corporation and L. S. Starrett Company were the leading taxpayers, each assessed at over \$1 million. In addition, Massachusetts Electric Company was assessed at approximately \$700,000, and New England Telephone and Telegraph was assessed at approximately \$450,000. Still, low incomes discourage the town's voters from taxing themselves unnecessarily for public expenditures. A relevant example cited by one respondent is the fact that the town has never seen fit to hire an assistant for the Superintendent of Public Works. Consequently, when the Superintendent is in his office, his workers in the field are unsupervised, thereby reducing the quality of that department's work.

The Finance Committee Report to the Town Meeting of 1966³³ further illustrates the financial concerns of the voters. The Finance Committee showed the Town Meeting that Athol's tax rate had increased significantly since 1953, and that in 1966 it was the highest tax rate for any Massachusetts town with a population exceeding 10,000. The Committee argued that not only was this a heavy burden on local taxpayers, but that it also discouraged new business from locating in Athol. Finally, the Committee suggested that this high tax rate resulted from poor management and excessive spending. According to the Committee, this was most visible in the increase in the cost of debt service for the town during the previous year. The solution proposed by the Committee was a reduction in spending, and one of the specific items mentioned by the Committee was their recommendation that the new treatment plan proposed by the selectmen not be financed by taxation.

Government

Athol is governed by a Representative Town Meeting, which has full legislative authority for the town. The Town Meeting does not consist of all eligible voters in the community, but rather of 180 elected representa-

tives. The town is divided into six precincts, and 30 representatives are elected to represent each precinct. A non-partisan election is held on the first Monday in February of each year, and each precinct elects ten representatives to serve three-year terms. Thus, one-third of the Town Meeting must face re-election every year. The annual Town Meeting which considers appropriations and other business for the upcoming year is held on the fourth Monday after the election. Other special meetings of the Town Meeting may be called when necessary during the year.³⁴

The executive power of this form of government resides in the office of selectmen. There are three in Athol, and they are elected at the same time as the representatives to the town meeting, in non-partisan, at-large elections. These selectmen have responsibility for the Police Department, the Fire Department, and the general administration of Town business. In actual practice, the selectmen spend their time signing warrants, issuing permits and licenses, meeting citizens who have problems with the town, and appointing people to office. The selectmen have full power to make appointments without consent of the Town Meeting. This appointment power is not so great as it might seem, since many of the key appointments are actually made by special boards or commissions. For example, the following elected boards have full responsibility for the town business which is within their authority; Board of Public Works, School Committee, Planning Board, Board of Health, Library Trustees, and the Housing Authority. As one selectman put it: "The people just don't understand how limited our authority is. People come to me with problems concerning streets and roads, and all I can do is go to the Department of Public Works and ask them to do something. I have no authority over that department. It belongs to the Public Works Commissioners."

The selectmen also have responsibility for drawing up the "warrant", which is essentially a list of proposed appropriations and policies to be

passed upon by the Town Meeting. The warrant is divided into articles, each consisting of some appropriation of town funds or some action to be taken by the town.

At some unspecified time before the Town Meeting, the selectmen are supposed to present the warrant containing their proposals to the Town Meeting's Finance Committee, composed of 15 members selected by the Town Meeting who serve for three-year terms. The Finance Committee then holds hearings on these proposals and publishes a leaflet containing its recommendations. In essence, the Finance Committee acts as an advisory agency, recommending its findings on all budgets or articles placed before the voters at the Town Meeting. In actual practice, however its power is much greater because, as most respondents pointed out, ...the Town Meeting almost always does what the Finance Committee recommends. (In 1969, for example, there were 75 articles: 66 of them passed unanimously; one passed after a tally; and eight were defeated.) The warrant and the recommendations of the Finance Committee are both made public before the meeting; the selectmen are required by the By-Laws to post the warrant in three public places at least seven days before the meeting.

History of the Sewer Issue

The history of the sewer issue in Athol dates back to the 1940's, when the Commonwealth of Massachusetts and local conservationists began to push to clean-up of the Millers River which flows through the town. In 1947, the Federal Housing and Home Finance Agency (HHFA) financed a study of the sewer problem. Athol received a \$10,850 loan toward the design of a treatment plant.

In spite of this incentive, the issue lay dormant for the next twenty years. The HHFA frequently inquired about the status of sewers in Athol (and about the date for repayment of the \$10,850 loan), but the town did nothing.

Local residents tried to stimulate interest. Conservationists kept the issue in the minds of the voters, and the Athol Daily News editorialized in favor of sewer improvements several times. Still there was no interest.

Whatever sentiment there was in favor of the treatment plant was effectively neutralized by opposition to these improvements. The most popular argument against the improvements was that there was no reason for Athol to clean up its part of Miller's River if the upstream polluters of the river failed to clean up their part. Many local residents felt that the effluent from paper mills upstream was responsible for the pollution. They argued that if the water was dirty when it came into Athol, it would be dirty when it left, no matter what Athol did to it. Closely related to this argument was the feeling that the demands by the Commonwealth of Massachusetts for Athol to construct a treatment plant were arbitrary and discriminatory as long as other polluters of the river were not also compelled to construct treatment plants. As a result, no action was taken on the sewer issue during the 1950's and 1960's.

In 1965, the selectmen appointed a special Sewage Treatment Plant Committee, headed by a selectman and former State representative. The committee proposed that the town construct a treatment plant at a cost of \$1,422,000. It further proposed that the Federal government pay about 30% of the total cost, and that the remainder (approximately \$1,000,000) be financed by the town. The Finance Committee, in its recommendations to the representatives at the Town Meeting, rejected the report of the Sewage Treatment Plant Committee on the grounds that the plant should not be financed from taxation. (This was part of a larger report made to the Town Meeting by the Finance Committee which concentrated, in large part, on the rising tax rate in the town).

The selectmen, who were still in favor of proceeding with the treatment plant, went to the Board of Public Works (composed of three elected

commissioners) and requested a trebling of sewage user charges (from \$5.00 to \$15.00). The selectmen intended to use the revenue from the increased user charges to finance the revenue bonds for the construction of the treatment plant. After 6 months delay, the Board of Public Works agreed to the increase.

In 1969, the selectmen proposed again the authorization of construction of the plant. The wording of the proposal was as follows:

ARTICLE 30. To see if the Town will vote to raise and appropriate a sum of money for the construction of a Sewage Treatment Plant, Pumping Station, Intercepting Sewers, related facilities and appurtenances, authorize the Board of Public Works, and/or the Board of Selectmen, to acquire land, rights of way, or easements, to provide whether the required funds shall be raised by taxation, transferred from available funds, by borrowing, or by a combination of these methods, and apply any Federal or State aid and grants of funds to reduce the cost to the Town, pass any vote or take any action relative thereto.

This time, with the construction financed by revenue bonds instead of general obligation bonds, the Town Meeting approved the proposal.

Conclusions

Two questions about the sewer issue in Athol are significant. Why did Athol wait until 1966--nearly 20 years after the first sewer study--to consider the sewer bond issue? Why did Athol pass the sewer bond issue in 1969 after defeating it in 1966?

In answer to the first question, it would appear that the arguments against building the treatment plant were sufficient to convince the residents of Athol that they ought not to take immediate action on the plant--even though they were receiving pressure from State and Federal agencies. The following arguments seem to have been most important:

There was no reason for Athol to act alone while other polluters of the Millers River were allowed to continue their pollution.

Action against Athol was arbitrary and unreasonable so long as the Commonwealth did not act against other polluters of the Millers River.

The Metropolitan District Commission was going to use water from the Millers River in the Quibban Reservoir, and when it did so, it would construct, and pay for, a treatment plant.

It would be more efficient to build a single treatment plant to serve both Orange and Athol--and share the cost between the two towns.

The cost of the treatment plant was too high.

It is interesting to note that none of these arguments suggest that the treatment plant was not needed, nor that the plant would not be good for the town of Athol. Indeed, the town seemed to be agreed, at least publicly, on the need to abate pollution of the Miller's River. But the voters disagreed about when the project should be undertaken. Furthermore, there were many residents who felt that if the main issue were pollution, Athol should not act until it was clear that they had chosen the most efficient and effective means of ending pollution. Another factor which may have contributed to delay, (although it was not so publicly expressed) was the desire of many residents to minimize town expenditures. If the need for a treatment plant at this place and at this time were not absolutely clear, then perhaps the town ought not to make the expenditure until the need was clear. In 1966, the issue was apparently clear enough to the selectmen to justify a proposal in the warrant; but it was apparently not clear enough to the Town Meeting to justify passage.

Passage of the bond issue in 1969 is attributable primarily to a change in financing from general obligation bonds to revenue bonds. There were other financial changes as well. For example, the proposal in 1966 included only 30% financing by the Federal government. By 1969, the

selectmen estimated that 75% of the cost would be paid for by the Commonwealth or the Federal government. Also, interest rates, which were very high in 1966, had lowered. In addition, by 1969 State pressure on Athol to build the plant had increased to the point where it had an impact on the residents. Although there is no way to measure successfully the pressure that was being exerted, it seems clear from conversations with respondents in Athol that the townspeople felt in 1969 that the demands by the Commonwealth could no longer be resisted.

These conclusions were offered by most respondents in Athol; four additional features of the case seem to be important. First, this was a case where State interference in local affairs was apparently successful. Although the residents resented State orders to clean up the Millers River, and felt discriminated against by the State agency, they did comply when the State pressure was strong enough. This was not always the case in other communities that were studied, for example Avon, Ohio. However, there was no opposition to sewers in Athol--just opposition to the timing of the sewers. In Avon, by contrast, the argument was over growth and development, with sewers representing development, and there were strong partisans on both sides. This suggests that if there is no opposition to sewers per se, and merely differences of opinion over the timing of the action, State pressure may provide the necessary incentive for immediate action.

Second, Athol is a clear case of a sewer issue being defeated because of its means of financing. Clearly, citizens are not oblivious to these important financial matters, and a change in financing can mean success for the sewer issue. Notice also that the change was from general obligation bonds to revenue bonds. This is consistent with our finding that the voters prefer bonds repaid by user charges to those repaid by increased taxes. The history of the vote indicates that the citizens of Athol were especially concerned about taxes: The Athol Town Report for 1966 devoted considerable of attention to the tax issue and the Finance Committee presented a special report on taxes at the beginning of the Town Meeting.

The third, and most interesting feature of this case is the fact that the issue was passed by a Town Meeting and not a referendum. The number of representatives voting on this issue was only 180, out of a population of nearly 12,000. However, the important difference between a referendum and a Town Meeting, does not depend entirely on the number of persons voting. More important is the way in which the vote is taken. In the referendum, voters consider the question alone, by secret ballot, in a voting booth. In the Town Meeting, voters confront one another over the issue, discuss and debate the issue, and vote in full view of one another. These conditions, combined with the fact that fewer voters are present at town meetings, have a definite effect on the outcome of the vote. Due to psychological pressures, the voters are more apt to be influenced by each other. Thus, it is doubtful that action would have been defeated so decisively in 1966 had a referendum been held. On the other hand, it is equally questionable whether the final vote in 1969 would have been unanimous, or even passed at all if it had gone to a referendum.

One reason for the unanimity of the vote (according to many of our respondents) was the fact that the Town Meeting nearly always goes along with recommendations of the Finance Committee. The record seems to indicate that the Town Meeting agrees with the recommendations of the Finance Committee when either of two conditions prevail: there is no serious opposition to the recommendations and the Finance Committee is unified in its recommendations. A closely related phenomenon is visible in many of the other cases under studying: the existence of a "united front" of elected community officials makes it much easier to gain community acceptance of a public improvement.

AVON , OHIO

AVON

This bond issue was submitted to the voters of the Town of Avon, Ohio, on November 8, 1966. The wording of the proposition was:

"Shall bonds be issued by Avon City, Lorain County, Ohio, for the purpose of paying part of the cost of constructing sanitary sewerage collection facilities including the acquisition of the necessary real estate and interests in real estate in the sum of (\$800, 000) eight-hundred thousand dollars and a levy of taxes be made outside of the ten mill limitation estimated by the county auditor to average 2.51939 mills for each one dollar of valuation which amounts to twenty-five and 1939/1000 cents for each one hundred dollars of valuation for a maximum period of thirty (30) years to pay the principal and interest of such bonds? "

The project to be constructed with the proceeds of these bonds (plus the proceeds of special assessments and mortgage revenue bonds) was a new sanitary sewer system. The vote on the referendum was 751 (44%) in favor, and 967 (56%) against. The referendum was defeated.

Population

The primary governmental unit involved in this referendum was Avon, Ohio. Avon is a city of 7,000 people, located west of Cleveland, and four miles south of Lake Erie. It has traditionally been an excellent farming area, and its truck farms once supplied produce for the residents of Cleveland. Farming is no longer profitable, however, and only a few of the truck farms still exist. The proposed extension of Interstate 90 through the northern part of the city in an east-west direction and the proposed extension of State Route 76 through the center of the city in a north-south direction would seem to make it a prime candidate for suburban residential development. Such development has not occurred.

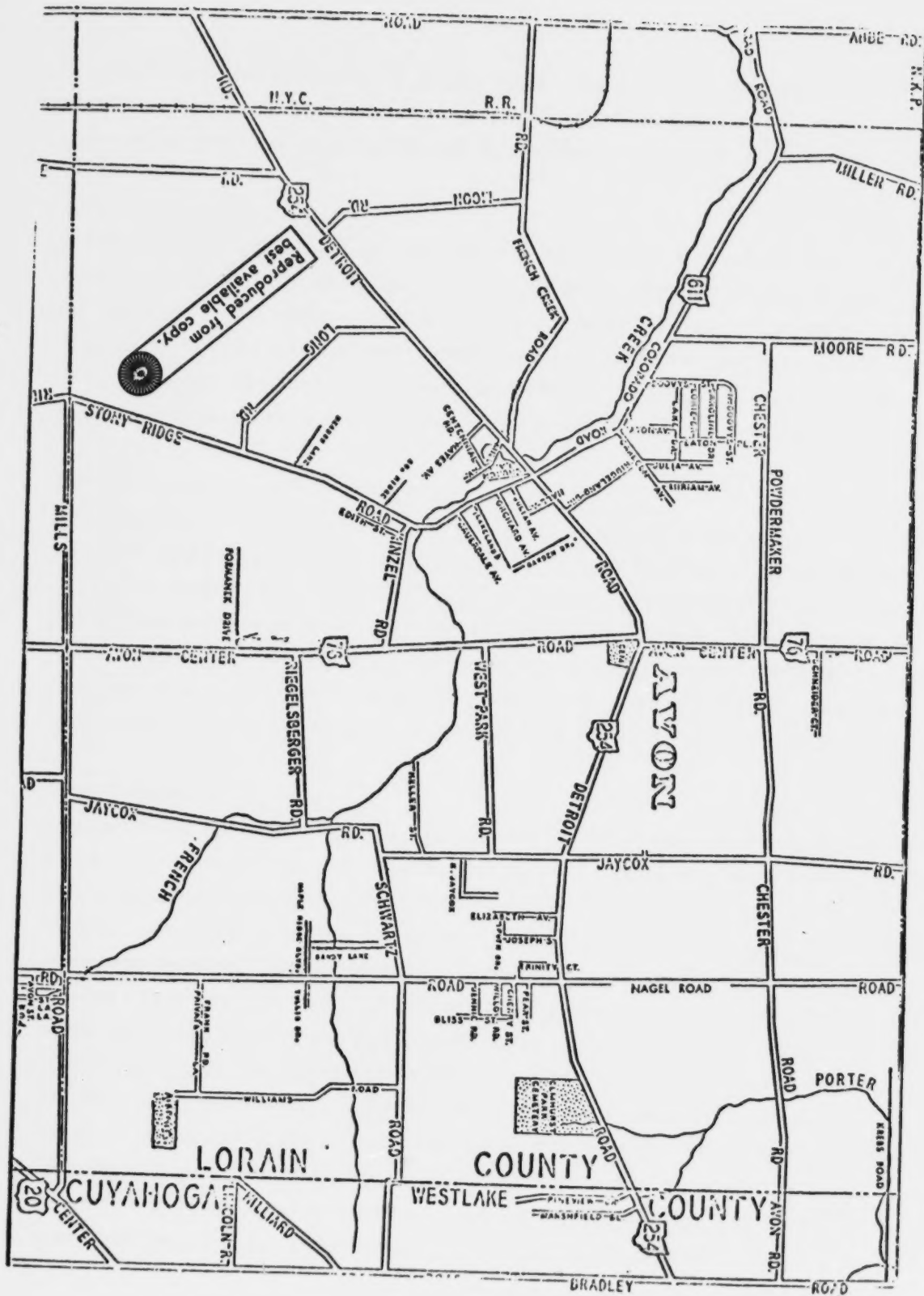
This is not to say that there has been no growth at all. In 1950, the

population was only 2,773. By 1960, it had grown to 6,000. And in 1970, according to preliminary Census data, it was 7,137. The physical location of this growth can be located easily on the map on the next page. It occurred primarily in two areas: first, in the area surrounding the junction of Detroit Road and Colorado Road, and second, in the area east of Jaycox Road and south of Detroit Road. The rest of the city remains primarily farmland, except for the area north of, and immediately adjacent to, Chester Road, which is marshy and unsuitable for farming.

The rapid population growth during the 1950's brought few measurable changes in the socioeconomic characteristics of the population. For example, there were no non-whites living in Avon in 1950; there were none in 1960; and there apparently were none in 1970. The same can be said for Mexican-Americans and Puerto Ricans, although one resident said that ". . . a few of them [i. e. , Puerto Ricans] may have been able to infiltrate during the past couple of years." (Puerto Ricans from Lorain are now being used as laborers on the truck farms in Avon.) One consequence of the growth in population during the 1950's was a decrease in the median age of the population. The influx of young families during the 1950's has also been reflected in an increase in the school population in Avon during the 1960's, requiring the construction of an additional elementary school and additions to other schools. The median age of the population has remained relatively stable since 1960, when it was 25 years.

These data do not fully explain the character of population growth in Avon during the era 1950-1970. According to local residents, the in-migration to the city occurred from two directions, with two different types of migrants. From Lorain came Eastern-European working-class families who wanted to escape the city and buy a small home in a relatively rural area. From Cleveland came younger professional and technical people, with no particular ethnic connection, who wanted to live in a rural or suburban setting. The in-migrants from Lorain settled along Jaycox and Nagel Roads and in the Northgate development on Colorado Road.

Local residents disagree about the current ethnic composition of the



Avon population. There is general agreement that the first two ethnic groups in the city were the English (who were Protestants and became Republicans) and the Germans (who were Catholics and became Democrats). Many residents contend that there are no other significant ethnic groups in the community. Others argue that the newer migrants from Lorain were Czechs, Hungarians and Poles and that these groups now make up a substantial part of the population. They also point out that this has great significance for the politics of Avon, since these Eastern European migrants were associated with the Democratic machine of Lorain. According to the 1960 Census, there were 1286 persons in Avon who reported themselves as being foreign-born. Of these, 556, or 43%, were from Czechoslovakia, Hungary or Poland. Only 334 were from Germany and England. Eastern Europeans comprise at least 13% of the total population.

Residents of Avon often claim with pride that their city has the highest level of income in Lorain County and one of the highest in Ohio. Although there is no evidence to confirm or deny this assertion, it is clear that the median income in Avon (\$7,215 in 1960) would lend some substance to these claims. Moreover, in 1960, only 6% of the families in Avon had incomes of \$3,000 or less, and 29% made \$9,000 or more. The median family income for urban areas of Ohio in 1960 was \$6,442, and for Lorain County in 1960 it was \$6,241.

This should not suggest, however, that Avon is a white-collar suburb. In terms of occupation classifications, 51% of all employed males are in craft or operative occupations. Laborers comprise another 8%, bringing the blue-collar labor force to 60% of the total. Professional and technical and sales account for only 20% of the population. Managerial occupations account for 14%, but many of those in this category are farm operators.

Housing in Avon consists primarily of single-family, owner-occupied units. Of the 1534 units occupied in 1960, 1337, or 87%, were owner-occupied; the remainder were rental units. Of the 1661 units which

were classified as single-family or multi-family, 1530 (95%) were single-family. The median value of an owner-occupied home in Avon in 1960 was \$18,800, as compared with \$14,000 for Ohio urban areas. In 1960, 62% of all Avon residents had been living in their current housing unit for six years or less.

Economy

The economic base of Avon is currently rather weak. The truck farms which were once the mainstay of the economy have ceased to be productive, and the community has been slow to develop an industrial base. According to a city bond prospectus dated August 15, 1969³⁵, there were only four industries in Avon in 1969, employing a total of 220 persons. It is clear that many residents must travel out of the city--to Lorain, Elyria, Avon Lake or Cleveland--for employment. The city's real estate value is composed of 78.5% residential, 11.5% commercial, 8.0% agricultural, and 2.0% industrial property. A combination of commercial, industrial and public utility values accounts for 35% of the total assessed valuation of property in Avon (which was \$19,401,530 in 1968-69). Per capita assessed value is \$2,436, compared with \$3,359 for the 203 cities in Ohio.

Avon's record in attracting industry is particularly poor in comparison with its neighbor to the north, Avon Lake. Avon Lake was part of Avon until 1917, when there was a dispute over the creation of a municipal water system. Those in the northern part of Avon at that time wanted the system, and they became a separate local government in order to advance this project. Avon Lake has continued to lead Avon in the provision of certain public services, having established a municipal sewer system during the 1950's.

Some persons argue that Avon Lake's advancements in the provision of water and sewer systems explains why it, rather than Avon, has been able to attract industry. This argument, however, is subject to much debate. Whatever the reason, the facts are unmistakable. Even though

Avon consists of more than 4,000 acres, only 2,149 acres are developed. The area north of Chester Road has been a potential industrial park for many years, but still stands undeveloped. This stands in contrast with Avon Lake, where a solid industrial base has enabled that city to maintain a high level of public services while levying a smaller property tax on its residents than does Avon. (See Table 1, below.)

Table 1. Comparative Economic Development of Avon and Avon Lake		
	<u>Avon</u>	<u>Avon Lake</u>
Number of People	8,200	12,800
Annual Real Estate Tax Revenue	\$917,603	\$4,132,475
Number of Full-time Firemen	0	13
Number of Full-time Policemen	3	13
Students per Teacher	27	22
Real Estate Tax Millage	47.25	44.77

The financial position of the government of Avon is closely related to its economic base. As the data in Table 1 show, Avon is in a substantially inferior position to its neighbor, Avon Lake, in terms of quantity of services and tax rate. On the other hand, in comparison with Avon Lake and its other neighbors, Avon's tax rate is about the same. (See Table 2.) In addition, the city felt enough need for additional revenues to adopt a one percent city income tax in 1968.

Avon is governed by a weak mayor-council form of government. The city council is composed of seven members, four elected by wards and three elected at-large. The mayor and all members of the council serve for two-year terms and are elected on a non-partisan basis. The city council has substantial authority to overrule the mayor on important policy matters, and all of the mayor's appointments must be confirmed by a two-thirds vote of the council. On the other hand, there are some parts of the charter which are to the advantage of the mayor. Of particular importance is the fact that the mayor can veto any act of the council

as long as there is one dissenting vote on the council.

Table 2. Tax Rates of Avon and Neighboring Communities		
<u>City</u>	<u>1965 Tax Rate</u>	<u>1969 Tax Rate</u>
Avon	41.69	51.75
Avon Lake	40.15	46.67
Sheffield	49.60	53.97
Sheffield Lake	50.39	67.25
North Ridgeville	40.07	50.68
Elyria	40.91	50.58

Avon has recently decided to participate in the French Creek Council of Governments, a regional federation of cities along the French Creek which was established to provide for regional planning and to facilitate the development of cooperative arrangements for the provision of services. The Council of Governments (COG) has been strongly supported by the mayor of Avon since its inception. One of the cooperative projects proposed by the COG is a French Creek sewer system. Avon's possible participation in this proposed regional system was a major issue in the recent sewer bond elections.

History of the Sewer Issue

The history of the sewer issue in Avon is important for an understanding of recent bond elections. In 1955, a developer built a housing subdivision known as Northgate north of Detroit Road on Colorado Road. The developer also provided sewers for these new homes and built an 88,000-gallon treatment plant to treat the sewerage. Some observers claim that from the beginning this plant was plagued by faulty workmanship in construction. They also claim that the system must process a much greater volume of liquid than it was designed to handle, because of recent population in-migration. Records of the treatment indicate that it is flooded almost every year and inoperable for brief periods of time. They also show that the plant often handles over 100,000 gallons a day, although its capacity is only 88,000 gallons. The Ohio Department of Health evaluated this system in January, 1970, and rated its performance 13 on a scale of 1 to 100. Any score below 40 was considered a "complete failure of the system to meet its intended purpose."

The Northgate plant has never been adequate for the needs of the residents of Northgate, and, in fact, it became a major source of pollution soon after it was built. The failure of the Northgate plant was used thereafter by State and Federal agencies as a reason for sewerage the entire city. Complaints from the Ohio Water Pollution Control Board about the Northgate plant led the city, in the late 1950's, to a study of the problem. A loan of \$12,600 from the Federal Government in 1960 paid the necessary engineering fees.

Armed with a study and plans for sewer construction, the mayor attempted to get the issue on the ballot so that bonds could be issued. The city council, failing to see the need for sewers and unwilling to propose a raise in taxes to finance sewer construction, took no action on the matter until 1963.³⁶ In a special election on May 7, 1963, a proposal to increase the millage by 1.8523 mills to raise \$500,000 for sanitary sewers was defeated by a vote of 320 to 663. The plan for the

proposed sewer system is shown in Figure 1. The plan emphasizes the use of gravity flow--at least for the northern half of the system. The only place where gravity flow was not to be utilized also became one of the most controversial aspects of the system--a 12-inch trunk line across farmland in the southeast corner of the city. Although the bond issue was for only \$500,000, the total cost of the project was much more. Although the records are incomplete, it is likely that the remainder of the cost was to be raised by assessment or by mortgage revenue bonds.

On November 3, 1964, the sewer issue was placed on the ballot again. The clerk's records indicate that the city proposed an increase in taxes of 2.0 mils for five years for "sewer improvements." This was a straight levy; there were no specific sewer plans. The issue failed, with 911 voting in favor and 999 opposed.

In 1965, the city placed on the ballot a proposed sewer bond issue of \$300,000, to be paid for by an increase of 1.0387 mills in the tax levy. The 1963 plan, shown in Figure 2, was used again as the basic plan for the system, but the amount of construction to be paid for by this bond issue was smaller than in 1963. This was also an election year for city officials. One of the candidates for mayor ran on a platform of opposition to sewers, charging that the plans called for the public to pay for capital improvements that would benefit special interests who wanted to develop certain areas of the city. The referendum was defeated on November 2, 1965, by a vote of 794 in favor to 1036 against. In the same election, the anti-sewer candidate was elected mayor.

In 1966, the city council, led by a political rival of the new mayor, made arrangements with the engineer of the 1963 sewer plan. The newly elected mayor, who was not in full control of the city government, was excluded from these arrangements. The sewer plan selected by the council was essentially the same as the 1963 plan. Although he officially recognized the need for sewer construction, the mayor repeated his

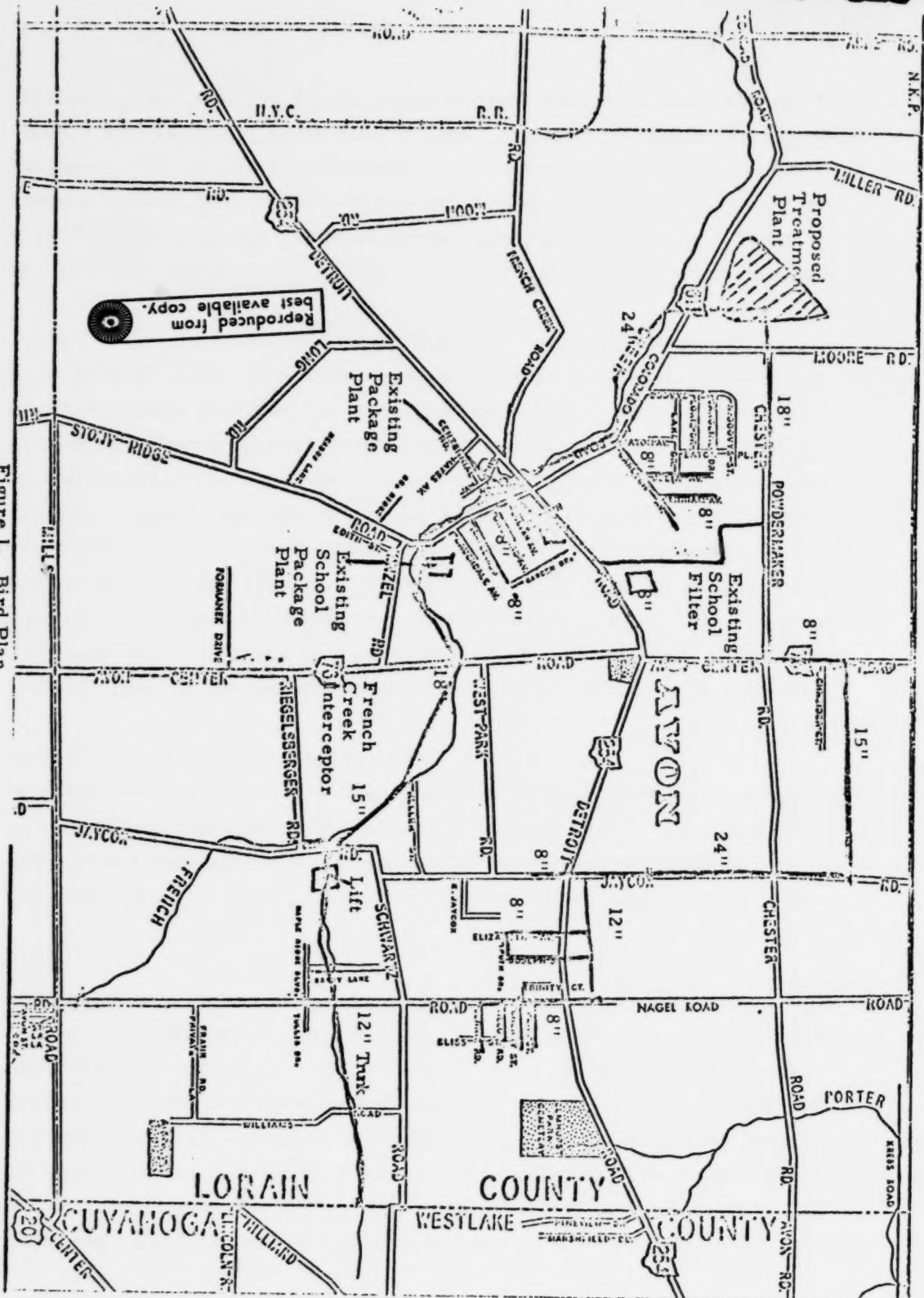


Figure 1. Bird Plan

charges about benefits to special interests. The total cost for the general obligation bonds part of the 1966 proposal was \$800,000, and the increase in the tax levy was to be 2.51939 mills. The issue was defeated by a vote of 751 in favor to 967 opposed on November 8, 1966.

In 1967, the mayor began to investigate the possibility of a regional sewer system. He was convinced that the regional idea would save the city money and encourage the investment of Federal and State funds in the project. The council did not agree. Although there was no plan for sewers in 1967, the council decided to try a new tactic for presenting the issue to the voters. On the ballot was a question which asked the voters to approve an increase in taxes for unspecified "purposes other than debt service." Part of the money was to have been used for sewers. The election was held on May 2, 1967, and was defeated by a vote of 644 in favor to 720 against.

The next important event in the history of sewer elections in Avon took place on December 10, 1968, when the Ohio Water Pollution Control Board imposed a building ban on the city. The ban would be lifted, according to the OWPCB, only when Avon built a sewer system. Imposition of the building ban was the latest in a long series of disputes between Avon and the OWPCB, beginning with the complaints by that Board about the defective Northgate sewerage treatment plant many years previous.

In 1969, a new sewer plan was introduced by the city council. This time the council had a local engineer draw up a plan for a sewer system. This plan is found in Figure 2. This sewer plan was the most ambitious ever proposed in Avon. Although it did not contain the controversial line south of Schwartz Road, it did contain two equally controversial items: a line across the north part of town, above Chester Road, and a line down sparsely-populated Stoney Ridge Road. The first of these additions was clearly designed to attract industry, since there is little population that far north in the city. Because of its possible influence on industrial

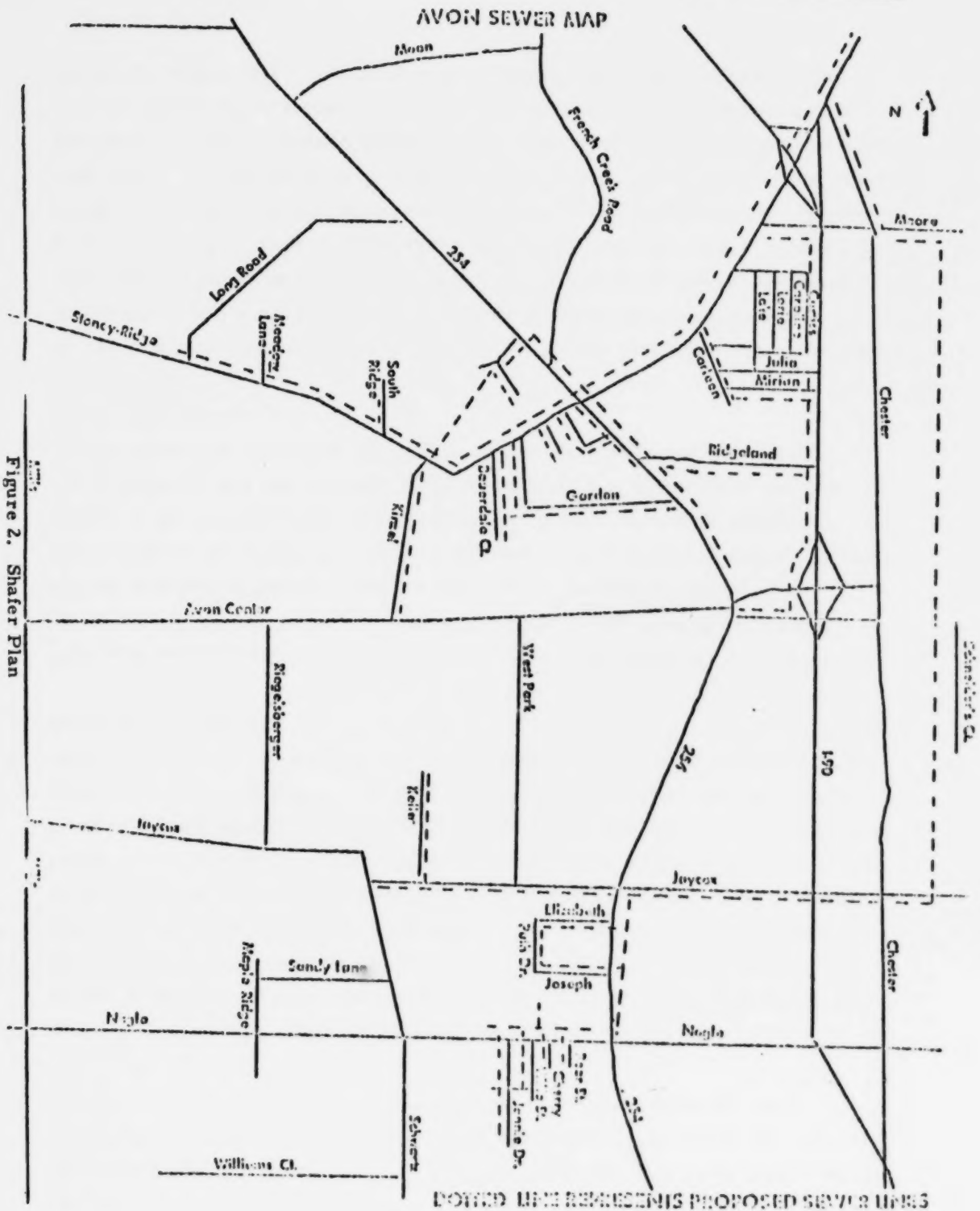


Figure 2. Shafer Plan

development of the city, the chamber of commerce played a larger role in this campaign than it had in any other.

One possible savings to be derived from the 1969 plan lay in its complete reliance on gravity flow, which eliminated the cost of constructing lift stations (although there was a possibility that it would require deeper pipes, which might add cost). The total cost of the project was set at \$4,089,645. To raise this money, the council specified the following sources of money: special assessments--\$1,590,000; Federal grants--\$399,645; general obligation bonds--\$1,200,000; and mortgage revenue bonds paid for by sewer rental charges--\$900,000. Thus, the voters were to consider a \$1,200,000 bond issue to be financed by a 5.2 mill increase in taxes. The voters went to the polls on June 24, and rejected the issue, 662 in favor to 992 against. As in other years, the man who was now their mayor led the opposition--this time in the form of a Citizens' Committee on Sewers.

In 1970, the mayor finally got his sewer plan on the ballot. The most important aspect of this new plan was participation in the French Creek system. (See Figure 3.) Unlike earlier plans, the French Creek Plan does not attempt to sewer sparsely-populated areas; only populated areas of the city would be served. This plan could make use of gravity flow, thereby necessitating the construction of a lift station on Jaycox Road. The other notable feature of the plan was its reliance on the proposed French Creek Interceptor. Indeed, the plan proposes the construction of only a collection system for Avon; treatment would presumably be provided by the COG. These changes help to explain the lower cost of the 1970 proposal: \$1,738,350. Of that total, \$1,159,820 was to be paid by special assessments, and \$578,530 was to be paid by general obligation bonds. However, the amount of the bond issue proposed to the voters was \$900,000. The reason for this is a ten-mill limitation (in the Ohio Constitution) on taxes levied without a vote restricting the amount of special assessments which can be levied. The maximum amount of special assessment bonds that Avon could issue was \$846,000. Thus,



PROPOSED FOR IMMEDIATE CONSTRUCTION BY AVON CITIZENS' SEWER COMMITTEE
FUTURE CONSTRUCTION BY FRENCH CREEK COUNCIL OF GOVERNMENTS

the remaining \$313,820 to be financed by special assessment must be included in the voted bond issue. The total for general obligation bonds plus the remainder of the special assessment bonds is \$892,350, rounded off to \$900,000. In order to pay for these bonds, a tax increase of 3.9 mills was proposed. In spite of the mayor's support, the plan was defeated in an election on May 5, 1970 by a vote of 531 in favor to 703 against.

The subject of this case study was the bond election which took place in 1966. However, an understanding of this election depends upon an understanding of all seven of the elections which have taken place during the last eight years. Therefore, for purposes of analysis, the discussion will not be limited to the 1966 election alone.

The campaigns which preceded the elections varied widely in their content and intensity. In 1967, for example, the issue was hidden in a general purpose tax levy. In 1969, by contrast, there was an extensive campaign. Although the voters of Avon had already considered five previous sewer elections, and presumably were aware of the essential issues, the proponents of the bond issue produced a leaflet which explained the issue in extensive detail. Leaflets, newspaper stories, and advertisements were used in favor and against the issue. There were public debates and guest speakers; the chamber of commerce offered a free dinner to people who were interested in hearing a speech about the need for sewers (300 people attended); and proponents put up pro-referendum posters.

The participants in the campaigns varied somewhat over the decade, but during the last five years, they narrowed down to two main groups. The proponents had been led by the chamber of commerce and the opponents had been led by the mayor, until the last election when the mayor was able to propose his own sewer plan. One characteristic of all the campaigns, including those in the early 1960's, was the division of the city's elected leadership on the issue. In 1963 and 1964, the mayor was in

favor and the council opposed; in 1965, 1966, 1967 and 1969, the council was in favor and the mayor was opposed; in 1970, the mayor became a proponent of sewers only to find opponents to sewers on the council.

The issues in the campaigns changed somewhat from the beginning of the decade. In 1963, for example, neither side put on much of a campaign. By 1965, it was clear that those in favor of sewers would have to sell the issue to the voters, and they began to develop arguments in favor of their project. They focused on the failures of the Northgate treatment plant and the ensuing complaints from the OWPCB and on the benefits of industrial development and concomitant growth in the city's tax base which would presumably be derived from sewers. By 1969, the proponents had added the issue of cost, arguing that sewers were inevitable and that the cost was constantly increasing. (Their slogan in 1969 was, "Sewers will cost more tomorrow.") The fact that the OWPCB placed a building ban on Avon in December, 1968 was another argument used to support the bond issue.

In 1963 and 1964, the opposition was just as inactive as the pro-sewer forces. By 1965, the mayor was raising the issue which would be the basis of his anti-sewer campaign and his political career: private interests would be the major beneficiaries of the public sewer project. In 1967 he added the issue of the advantages of a regional, as opposed to strictly local, sewer system.

In 1970, with the mayor in favor of sewers, the opposition was less vocal than in the past, and less focused on the important issues. Opponents concentrated on issues of cost, reasons for not cooperating with the regional system, and popular resentment of State and Federal pressure in favor of sewers.

Since city politics in Avon are formally nonpartisan, the sewer bond elections were supposed to be free from partisan politics. For the most part, this was true, but active participants in these campaigns tell a

different story. They say it was no accident that the proponents of sewers used the chamber of commerce as the organizational base for pro-sewer activities and that the chamber of commerce was primarily a Republican organization. One of the most active proponents of sewers was the Republican nominee for state representative from the Avon area for the 1970 election, and his brother, a member of the city council. On the other side, the mayor, who was the chief opponent of sewers, was the Democratic committeeman for Avon. His brother was Lorain County auditor and a member of the Lorian City Democratic machine. The rivalry between these two political factions was more than a simple partisan dispute. On many occasions during the past five years, it became so bitter that it could more accurately be described in the terms used by some of the respondents as a "feud" or "vendetta." The mayor accused this powerful Republican family of trying to exploit public works (like sewers) and public office for private gain (by the family-owned business). The mayor's opponents denied these charges and added that the mayor was the representative of a small group of wealthy landowners who wanted to thwart the development of Avon because they didn't want increases in their taxes. The form of the dispute took many forms.

In 1966, when this dominant Republican clan tried to obtain the necessary zoning changes for a shopping center on their property, they had trouble with the Avon Planning Commission (and particularly two mayoral appointees on the Commission). The rival clan then called for the resignation of the mayor's appointees, charging them with a "conflict of interest."

In 1968, two months after the formation of the French Creek Council of Governments (in which the mayor had played a leading role), the Avon City Council (led by a member of the opposition) voted to abandon the COG's sewer plan in favor of the city's own sewer system.

On still another occasion, the mayor charged his Republican rival on the city council with a "conflict of interest," alleging that he was using his office of city councilman to advance the interests of the family-owned business; the city council promptly censured the mayor for his allegation.

When the sewer plan of 1969 was conceived, the mayor was not included in the planning process, even though the engineer who presented this scheme had been appointed to the position of city engineer by the mayor himself. It was held by some that the city engineer was at this time employed by the local company owned by the mayor's political rivals.

Interpretation of Outcome

There were seven major reasons cited by our respondents for the failure of the sewer bond referenda in Avon. The single most important reason, and the reason which was cited by every respondent, is that the majority of the residents of Avon simply did not want sewers. This is not because they favored septic tanks, but rather because they were against the land development that they saw as the natural consequence of sewer construction. There was a great deal of discussion in Avon of the "selfish interests" who would profit from the construction of sewers and of the "outside developers" who would come into Avon and change the character of the town if there were sewers. Many of the residents are retired farmers or people who have recently escaped the city and who like the semi-rural atmosphere of Avon. They feared development would change all of this, and preferred that the town remain unchanged.

A second reason cited by some of the respondents was the unwillingness of Avon residents to tax themselves for public expenditures in general. Although there were serious differences of opinion on this point, some respondents argued that it was difficult to pass any referendum in Avon, with the possible exception of those for school bonds.

A third reason cited by many respondents, both proponents and opponents alike, was that the residents of Avon resented the pressure being placed on the community by the Ohio Water Pollution Control Board (OWPCB). Many residents felt that they were being singled out by the OWPCB even though they were not serious polluters of Lake Erie (particularly in comparison with Cleveland), and that the reason for the OWPCB's action was

that the OWPCB was being paid by developers to do this.

Several respondents argued that the most important reason for failure was that there was "no united front" put forward by the major elected officials of the community. That is, in each referendum there was some elected official--either the mayor (from 1965 to 1969) or some other member of the council--who would oppose sewers. This legitimized the opposition of many undecided residents who believed that if elected officials were undecided, then there must be some doubt about the worth of the project. (It is interesting to note that both the mayor and his foremost political opponent cited this reason in almost identical language.)

A fifth reason is the charge that the public was misinformed on the issue of sewers. Persons supporting sewers often suggest that if the people only knew the real issues or only understood the finances or engineering of sewers, some of their "irrational" opposition to sewers would disappear. Closely associated with this argument is a suggestion that better publicity might have eliminated the ignorance of the people and helped the campaign to succeed. There is some difference of opinion on this point, however, since some others argue that the most effective campaign was the 1967 campaign when the issue of sewers was most obscured.

A sixth reason mentioned by several respondents is the partisan politics associated with the issue. Some blame land developers, particularly the Republican power structure, for the bad image of self-interest created by their support of the referenda. Others blame the mayor for making political gains out of opposition to the pro-sewer forces. Regardless of who is to blame, the issue was a highly partisan one, at least in the sense of there being two clearly-defined groups with positions on the issue who opposed one another for several years.

Finally, one respondent suggested that one reason for failure of the last couple of referenda is the fact that people in Avon were tired of the sewer issue. They had been debating it for almost a decade and had defeated

it every time it had been offered. Offering it again only antagonized people who had made up their minds long ago.

Our next task is to evaluate the reasons offered by our respondents for the failure of the bond elections. The fact that so many of our respondents--from both sides of the issue--mentioned several of these reasons for the failure of the referenda lends some weight to their explanatory value. Although there is no survey data to substantiate the claim that the residents of Avon are opposed to development of their community, authoritative observers of political behavior in the city seem to agree that this is the case.

Also, there is little doubt that some local residents resent the OWPCB pressure in favor of sewers. Indeed, the actions of the OWPCB could be described as dysfunctional in this particular city. The building ban imposed by the OWPCB hurt no one in Avon except the developers and realtors who were the major supporters of the sewer issue.

However, there is evidence with which to evaluate some of the other arguments. The results of several elections, recorded by precinct, provide some useful insights. Table 3 contains the votes, by precinct, for the 1965, 1966, and 1967 sewer bond elections; Table 4 contains the vote for 1967 charter amendments; and Table 5 contains the vote for mayor in 1969. Some respondents suggested that the sewer issue had become so politicized, and so associated with the feud between the mayor and his political rivals, that a citizen's attitude on the feud may have determined his position on sewers. Table 6 shows the vote, by precinct, on three separate issues during the period 1967-1969. These data seem to indicate a correlation between a vote for the mayor and opposition to the sewer bond election. Moreover, these two phenomena are also related to a vote against the 1967 charter amendments. This correlation does not mean that a citizen's attitude toward the mayor determined his vote on sewers (or vice-versa), but it does suggest the existence of two voting blocs in the city which voted against one another on several issues including sewers.

Table 3. Summary of Recent Sewer Issue Elections

Precinct	1A	1B	2A	2B	3A	3B	3C	4A	4B
1 1965 Vote 1965 Vote as % of 1965 Vote	195 100%	175 100%	160 100%	240 100%	219 100%	222 100%	132 100%	259 100%	220 100%
Number of Yes Votes in 1965 % of 1965 Vote Voting Yes	54 28%	76 43%	77 48%	115 48%	110 50%	82 37%	35 27%	135 52%	107 49%
2 1966 Vote 1966 Vote as % of 1965 Vote	169 87%	162 93%	130 81%	222 92%	214 98%	215 97%	128 97%	232 89%	214 97%
Number of Yes Votes in 1966 % of 1966 Votes Voting Yes	51 31%	66 43%	48 37%	123 56%	83 39%	79 37%	37 29%	125 54%	107 50%
3 1967 Vote 1967 Vote as % of 1965 Vote	145 74%	126 72%	145 89%	128 53%	186 85%	199 90%	72 54%	192 74%	180 82%
Number of Yes Votes in 1967 % of 1967 Vote Voting Yes	48 30%	46 37%	64 45%	77 60%	84 45%	78 39%	27 38%	106 55%	112 67%

1 November election-election of mayor. The mayor opposed small sewer issue.

2 November election--election of governor. The mayor "supported" big sewer issue. Size of issue caused decline of yes votes in Precincts 2A and 3A to the level of the hardcore opposition precincts: 1A, 1B, 3B, 3C.

3 May primary election--no candidates in Avon. The mayor opposed small sewer issue. % of yes votes from Northgate was high, but the turnout was surprisingly small. Experiment in neighborhood personal contact program in precinct 4B was very successful.

Table 4. May 2, 1967 Vote to Change Charter		
Precinct	Yes	No
1A	47	98
1B	46	80
2A	65	79
2B	77	41
3A	84	102
3B	78	121
3C	27	45
4A	108	86
4B	112	68
	<u>644</u>	<u>720</u>

Table 5. 1969 Vote for Mayor				
Ward	Republican Candidate		Democratic Candidate	
1A	33%	68	67%	136
1B	35%	72	65%	133
2A	56%	141	44%	113
2B	63%	117	37%	70
3A	43%	115	57%	130
3B	38%	90	62%	144
3C	36%	65	64%	115 ?
4A	60%	165	40%	109
4B	62%	157	38%	95
		<u>990</u>		<u>1045</u>

Table 6. Voting Outcome, by Precinct, For Selected Elections			
Precinct	1969 Mayoralty Candidate	1967 Charter Amendments	1966 Sewer Bond Election
1A	Democrat	No	No
1B	Democrat	No	No
2A	Republican	No	No
2B	Republican	Yes	Yes
3A	Democrat	No	No
3B	Democrat	No	No
3C	Democrat	No	No
4A	Republican	Yes	Yes
4B	Republican	Yes	Yes

In terms of voting on sewer bonds, Precincts 1A, 1B, 3B, and 3C seemed solidly opposed. Precincts 2B, 4A, and 4B were in favor. Precincts 2A and 3A were swing precincts, and the variable affecting their vote on sewers was the cost of the project: the higher the cost, the more they are opposed. (A precinct map of Avon is found in Figure 4.)

Another of the reasons suggested by our respondents has to do with the strategy of the campaigns which accompanied these bond elections. Some of the respondents, for example, felt that a high turnout helped those who oppose sewers; others disagreed. Similarly, some said that an informed electorate helped those who opposed sewers; others held the opposite opinion. While the data do not provide clear answers to these questions, they do yield some interesting information. For example, as one can see in Table 7, the two obscure sewer issues--the 1964 straight levy and the 1967 general purpose levy--came closest to being passed. This is not a clear test of the obscurity issue, however.

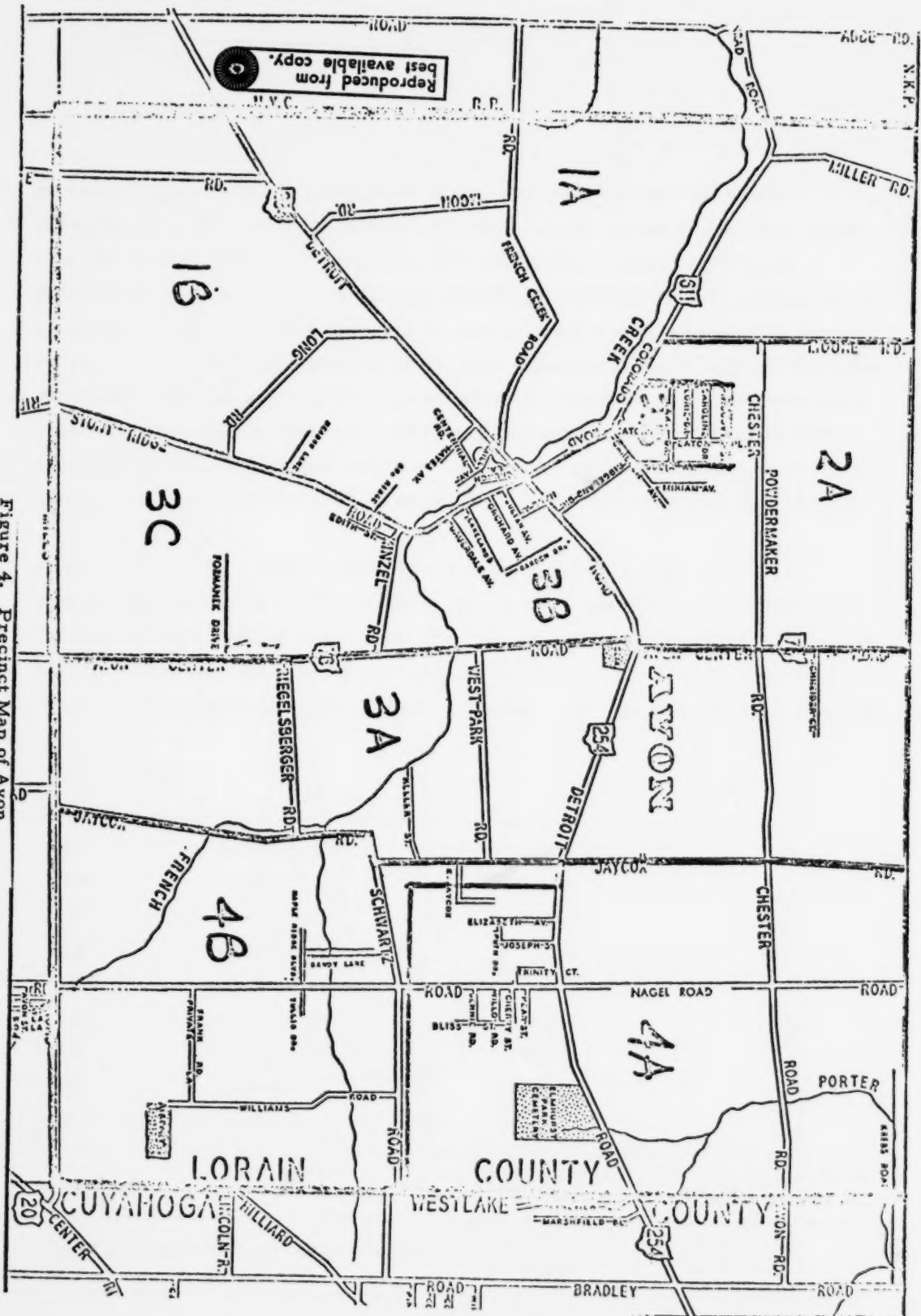


Figure 4. Precinct Map of Avon

Table 7. Outcome of Sewer Bond Elections,
Avon, Ohio, 1963-1970

Date	Votes Cast	Yes		No	
1963 May	983	320	31%	663	69%
1964 Nov.	1910	911	48%	999	52%
1965 Nov.	1830	794	43%	1036	57%
1966 Nov.	1718	751	44%	967	56%
1967 May	1364	644	47%	720	53%
1969 June	1654	662	40%	992	60%
1970 May	1234	531	42%	703	58%

Other variables were associated with obscurity in 1964 and 1967. In 1967, for example, sewers were tied to a general tax levy and therefore tied to other popular projects; in 1964, the straight levy was small, and voters may simply have reacted favorably to the low cost.

The evidence on the effect of turnout is even less clear. The nearest the sewer bond election came to passing was in 1964, and that was also the election with the lightest turnout. The next closest was in 1967, and the turnout in that election was also comparatively low.

Conclusions

Four conclusions can be drawn from the Avon case study.

First, sewer bond elections in Avon were tied directly to the issue of development. The debate over sewers was a debate over development, and development--at least for the present--has lost. A majority of Avon citizens appear to be opposed to development. Study respondents mentioned this attitude many times, in many different ways, but the basic idea was the same: "Avon is a nice town the way it is," "There is a fear of big outside developers coming in and changing the town," "Growth means buildings, people, and problems."

Second, in spite of this substantial opposition, some proponents of sewers keep trying. For example, in 1968, the OWPCB placed a building freeze on the city; in 1970, the mayor finally changed sides and came out in favor of sewers after securing acceptance by the council of the French Creek Plan. Neither of these actions changed the outcome of the election. The OWPCB's action, in fact, was actually dysfunctional because it hurt only the developers who were the main supporters of sewers.

Third, as many of our respondents pointed out, there was division among local government officials. Opposition to sewers by elected officials, particularly by a man as well respected as their mayor, created substantial doubts in the minds of the voters. Indeed, it would appear that the mayor was so successful that when he shifted from opposition to support of the sewer issue, he failed to bring enough of his followers with him to assure success.

Finally, Avon's most recent sewer bond election involved the issue of regional government. The Federal government is committed to regional solutions to water pollution problems, and it provides a financial incentive to those local governments which will adopt a coordinated regional waste treatment program. The availability of more outside funds was used by the mayor as an argument in favor of his regional plans. But many voters apparently placed a higher value on local autonomy than the Federal funds, because the issue was nonetheless defeated.

DEKALB COUNTY, GEORGIA

DEKALB COUNTY

The referendum in question was for one of fourteen bond issues submitted to the voters of DeKalb County, Georgia, on May 26, 1970. The wording of the drainage referendum was:

"Shall drainage improvement bonds in the amount of \$2,000,000 be issued by DeKalb County?"

A public notice described the bonds as follows:

"Drainage improvement bonds in the principal amount of \$2,000,000 for the purpose of installing storm sewers and drainage facilities, expanding and improving existing drainage and related facilities, acquiring the necessary land and rights-of-way, for the payment of damages arising therefrom and expenses incident thereto:"

The vote on the drainage improvements bond issue was 12,564 (42%) in favor, and 17,060 (58%) against.

Population of DeKalb County

The primary governmental unit involved in this referendum is DeKalb County. DeKalb is one of the five counties that make up the Atlanta metropolitan region. The metropolitan area has a population of approximately 1,300,000 people, and DeKalb County has a population currently estimated at 400,000. Part of the City of Atlanta is in DeKalb County, as well as eight other incorporated areas. The names and populations of these cities are found in Table 1.

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Table 1. Independent Governmental Units Located Within DeKalb County				
Municipality	Census 1960	Estimated 1968	Projected	
			1969	1970
City of Atlanta (Portion in DeKalb)	41,332	45,781	48,161	51,146
Avondale Estates	1,646	1,649	1,734	1,841
Chamblee	6,635	9,167	9,643	10,240
Clarkston	1,524	2,496	2,625	2,787
Decatur	22,026	22,827	24,014	25,502
Doraville	4,437	7,713	8,114	8,617
Lithonia	1,667	1,792	1,885	2,001
Pine Lake	738	752	791	840
Stone Mountain	1,976	2,320	2,440	2,591
TOTAL	81,981	94,497	99,407	105,565

DeKalb is one of the fastest growing areas in the Southeastern United States. According to data furnished by the Economic Development Department of the DeKalb Chamber of Commerce, during the year of 1969, 84 new and expanded industries located in DeKalb County, representing 1,944,137 square feet of new construction at an estimated dollar value of \$20,191,342. During the past 20 years, DeKalb County has been the focus of much of the residential growth of the Atlanta metropolitan area. As the data in Table 2 indicate, DeKalb County has more than quadrupled its population of the Atlanta SMSA. During the period from 1960 to 1969, 38% of the Atlanta metropolitan areas population increase occurred in DeKalb County.

The median age of DeKalb County in 1960 was 25. The age and sex distribution of the County's population remained relatively stable during the period 1960 to 1969, in spite of the rapid growth of the County.³⁷ Non-white population as a percentage of total DeKalb population increased from 9% in 1960 to 12% in 1969, but it is not expected to increase any higher

Table 2. DeKalb County Population Percentage of Atlanta SMSA and State of Georgia 1940 - 1969

	Population			
	1940	1950	1960	1969
State of Georgia	3, 123, 723	3, 444, 578	3, 942, 936	4, 568, 000
	558, 842	726, 989	1, 017, 008	1, 302, 000
	86, 942	136, 395	256, 782	364, 700
DeKalb's Percentage of SMSA	15. 6%	18. 8%	25. 2%	28. 0%
DeKalb's Percentage of State of Georgia	2. 8%	3. 9%	6. 5%	7. 9%
SOURCE: U.S. Bureau of the Census and Atlanta Region Metropolitan Planning Commission.				

than 12% during the next decade.³⁸ The non-white population is concentrated in Atlanta in DeKalb, Decatur, and in the rural areas and small textile mill towns of the eastern part of the country.

The population of DeKalb County has the highest income per household (\$12, 146) and per capita (\$3, 543) of any county in Southeastern United States with a population in excess of 50, 000. Percentage 46. 4 of all households in DeKalb have an income of \$10, 000 or greater.³⁹ It also has the highest level of education of any county in the Southeast.⁴⁰

This high level of income does not mean that there is no poverty in DeKalb County. Indeed, as Table 3 shows, a majority of all non-white family incomes are below the poverty level according to the 1960 census. Non-whites also occupy a substantial number of the deteriorating and dilapidated housing units in the county. According to the 1960 census, 65% of the non-whites in DeKalb live in housing which was classified as unsound.⁴¹

Table 3. Population of DeKalb County
by Family Income and Race

Family Income	White	Non-White	% White	% Non-White
Under \$3,000	4,592	1,798	8.7	57
\$3 - \$6,000	13,178	1,130	25	36
\$6 - \$9,000	17,921	153	24	4.9
\$9,000-above	16,845	43	32	1.3

Housing in DeKalb County is primarily single-family and owner-occupied. Of the 76,615 occupied units in 1960, 68,374 were single-family, and only 8,241 were multi-family. However, the number of multi-family units grew during the 1960's, so that in 1969, of 127,341 units, 99,173 were single-family, and 28,168 were multi-family. Moreover, when one considers only new housing construction, multi-family units represented only 8% of the total construction in 1960, but increased to 50% of all construction in 1969.⁴²

Until very recently, DeKalb County was primarily a bedroom suburb; a substantial number of persons in the county commuted to other parts of the metropolitan area (primarily Atlanta) to work. In 1961, the total labor force of the county was 90% higher than total employment in the county. There has been a conscious effort on the part of DeKalb to diversify its economy, and this effort has resulted in a significant increase in manufacturing in the county. This increase has come primarily in high-wage industry groups, thus contributing to the preservation of the high level of personal income in the county. Nevertheless, DeKalb still continues to export a significant percentage of its labor force outside the county.⁴³

Although there was no detailed information on the characteristics of the labor force in DeKalb available for this study, authoritative estimates suggest that it has a higher percentage of white-collar workers than other areas of the metropolitan region and that unemployment is low.

Government

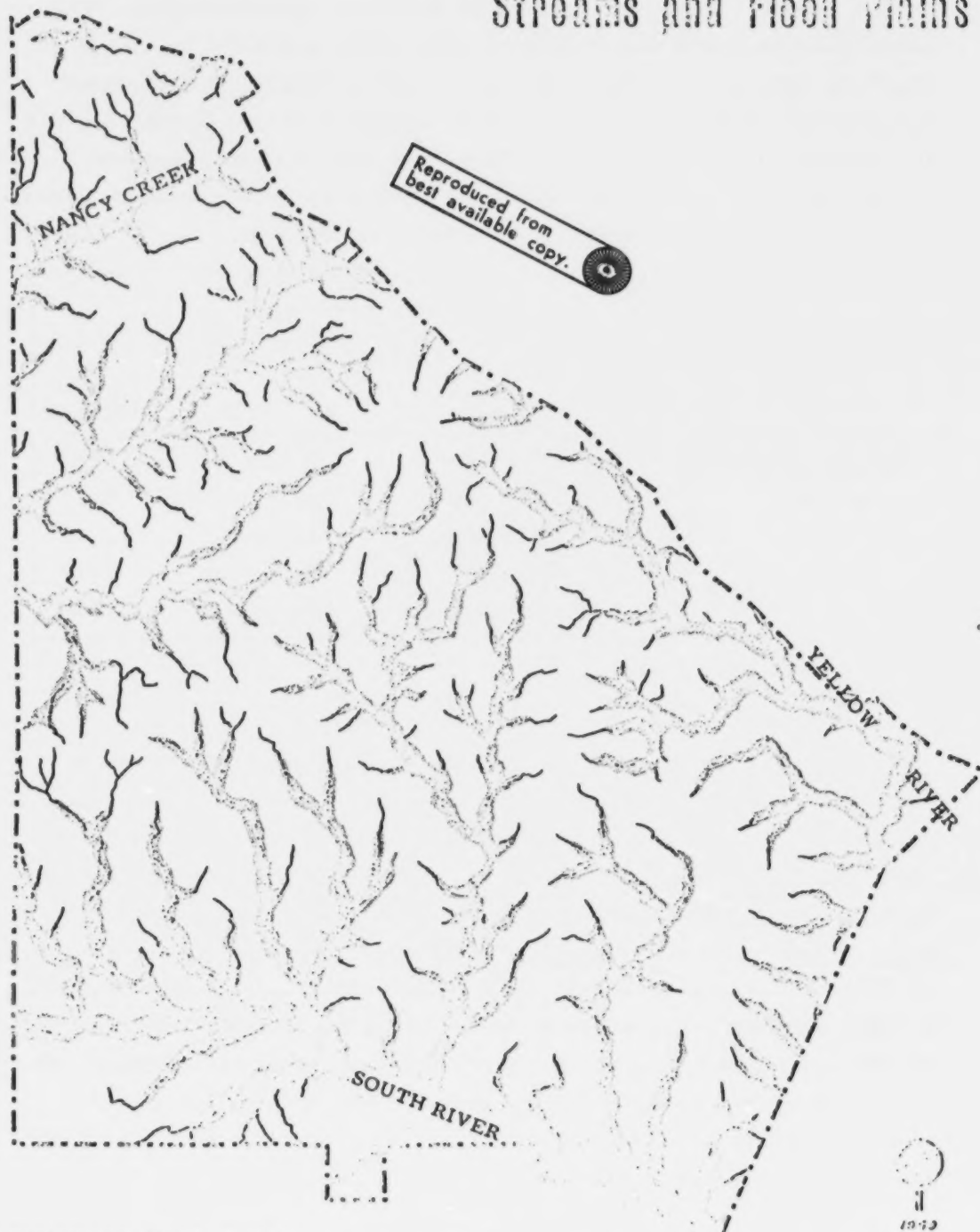
DeKalb County is governed by a board of county commissioners. The board is composed of five members; four of the members represent districts, and one, the chairman, is elected at large. The elections are partisan, and the current board is composed of four Democrats and one Republican. Commissioners have four-year terms, staggered so that some part of the commission must face election every two years. (A list of the commissioners appears below in Table 4).

Table 4. List of the Commissioners			
District	Name	Party	Term Expires
Chairman (At-large)	Clark Harrison	Democrat	1972
District One	Arthur C. Guhl	Republican	1972
District Two	T. M. Callaway, Jr.	Democrat	1970
District Three	J. C. Haynes	Democrat	1970
District Four	William M. Evans	Democrat	1972

Geography

Geographically, development of DeKalb County began in the cities of Atlanta and Decatur at the center of the western border of the county and moved north and east along the routes of the highways and railroads. There have been few topographical barriers to this development although there are some areas of the county where poor soil and excess water have created problems. The area south of and immediately adjacent to the South River is particularly susceptible to flooding. Eastern DeKalb also has flooding problems particularly along the Yellow River, and some creeks in the North such as the Nancy Creek overflow periodically. Excessive construction at the headwaters of streams contributes to the drainage problems. (A map of the county with major streams and flood plains indicated, appears in Figure 1).

Streams and Flood Plains



PREPARED BY DETROIT COUNTY

Figure 1. Streams and Flood Plains

During the last two decades of rapid growth in the county, developers were allowed to build on the flood plains of many of these streams. The result has been constant flooding of basements and other damage to property located in these areas. Future building on the floodplain has been limited by zoning changes recently enacted.

County Finances

The county's financial position is the subject of much debate. Services provided by the county out of tax revenue have decreased since sanitation and water were put on a user charge system in 1967. There have been no recent major capital improvements. The gross bonded debt of the county has been steadily decreasing over the past five years--from \$34 million in 1965 to \$28 million in 1969. However, in 1969, the county had the largest tax increase in its history. (Tax rates for the past five years are shown in Table 5).

The most important features of the county's financial position are directly related to DeKalb's recent political history. In 1968, the incumbent chairman of the board of commissioners was defeated in an election where the main issue was the fiscal responsibility of his Administration. His opponent charged that the administration had gone deeply into debt by borrowing on the county's water and sewer funds, which were not subject to audit. A significant part of the population never accepted these charges, and when the new chairman raised taxes by \$4.97 in the summer of 1969, on the grounds that he had to use that money to pay for the previous administration's debt, a large part of the public rejected this explanation. In short, 1970 was not a good time for a bond referendum.

County Politics

The controversial election of 1968, and the voters' quick dissatisfaction with the victor in that election, is symptomatic of the current political situation in DeKalb County. It was not always this way. In the early

Table 5.

Tax Rates for DeKalb County, 1965 - 1969

Actual Tax Rates per \$1000		1969	1968	1967	1966	1965
County						
	General	8.3.	7.90	8.20	10.20	10.20
	Fire	1.80	1.50	1.50	1.50	1.50
	Sanitation				2.20	2.20
	Bond Retirement & Interest	2.00	2.00	2.00	2.00	2.00
	Hospital	1.80				
	Accumulated Debt	2.46				
	Total County	16.37	11.40	11.70	15.90	15.90
Schools						
	Maintenance	NA	18.75	18.00	16.00	16.00
	Bond Retirement & Interest	NA	4.00	4.00	4.00	4.00
	Total Schools	NA	22.75	22.00	20.00	20.00
State		NA	.25	.25	.25	.25
Total Tax Rate		NA	34.40	33.95	36.15	36.15

1950's, when the head of one of DeKalb's County's oldest and wealthiest families was ending his long tenure as the single county commissioner, he had more control over DeKalb than the "power elite" had over Floyd Hunter's Atlanta.⁴³ But the history of the county ever since that time has been one of increasing political instability. Each of the last three chairmen of the board of commissioners has tried to succeed himself, and each has been defeated. The present chairman is in serious political trouble after losing the referendum, and most observers agree that he would probably be defeated if he ran for re-election.

This political instability stems from two factors: (1) the rapid growth over the past two decades, and (2) growth of the Republican party. The county's population growth during the past two decades has had a significant impact on the political scene. Even though the immigrants to the county have the same socio-economic characteristics as the original residents in terms of education level, income, occupation classification and race, they are still "new people" to DeKalb. When they did not find places for themselves within the existing party structure in the 1950's and 60's, many of them formed factions which challenged the incumbent leadership of the Democratic party. Since 1964 there has also been a growing Republican party, and many of the "new people" (along with disaffected conservative Democrats) have allied themselves with this party. The Republicans are optimistic about gaining control of the board of commissioners in the 1970 election.

The general instability of DeKalb politics makes it difficult to describe voting patterns in the county, but political observers make the following generalizations. The county is conservative, but its conservatism is of the Nixon variety. In the 1968 presidential election, Nixon won 50% of the vote; Wallace came in third. The Wallace supporters are located primarily in the southern and eastern parts of the county. Republicans are located in the southwest and northwest of the county. The liberal vote comes from the whites living around Emory University and from the Blacks in Atlanta and Decatur.

The Referendum of 1970

It was against this political background that the current referendum was held. Plans for the referendum began nearly a year before it actually was held. The first step was the appointment of a Citizens Advisory Committee on Capital Improvements. From the very beginning, partisan politics was evident in the bond campaign. The chairman of the Citizens Committee, a Republican, resigned from the post shortly after being appointed.

After public hearings in the winter and spring of 1970, special sub-committees of the Advisory Committee turned in their list of proposed capital improvements which totalled \$104 million. This was substantially more than the \$60 million county bonding capacity. In April, the full Committee reduced its requests to a package of \$35 million of high-priority projects. The new administration was not satisfied with this package, however, and increased the package by \$9 million--including money for a new jail, a new police headquarters, and a recreation facility in Glenwood Park. The items presented to the voters are found in Table 6.

It was apparent from the outset of the campaign that the referendum was in trouble. In May, the Republican Party announced its opposition to all but two of the fourteen proposed items on the ballot. Republicans charged that the administration was not living up to the Bond Accountability Law which provides that any statement of advertisement about the fate of bond money is binding on the people who dispose of the bond money. (This was a bill which was supported by Republicans and pushed through the State legislature after a previous administration had failed to carry out a large number of capital improvements which it had proposed during a successful 1961 referendum campaign.) This violation of bond accountability, according to the GOP, was most evident in the category of streets and roads, where the administration had allegedly established a \$3 million slush fund for industrial paving which the Republicans charged would be used for the benefit of contractor friends.

Table 6. Items in the Bond Referendum

Item	Amount	Result
Juvenile Detention and Care Facilities	\$ 2,170,000	Pass
Garbage Disposal Facilities	6,080,000	Pass
Drainage Improvements	2,000,000	Fail
School Access Roads and Sidewalks	1,850,000	Fail
Streets, Roads and Traffic Improvements	18,650,000	Fail
Parks and Recreation Facilities	3,510,000	Fail
Fire Department	1,000,000	Pass
County Jail	2,500,000	Pass
Courthouse Parking Annex	1,185,000	Fail
Hospital (South DeKalb)	1,950,000	Pass
Health Care Centers	1,140,000	Fail
Policy Department	1,500,000	Pass
Libraries	1,165,000	Fail
Vehicle Storage and Maintenance Facilities	300,000	Fail

Republicans also charged that the administration was unnecessarily costing the tax payers \$30,000 by holding a special bond election in May, rather than waiting until the general election in November. They also alleged that the administration had scheduled the election purposefully to encourage a low turnout so that the administration supporters could "push through the referendum". The opposition further charged the commissioner with a "credibility gap" because of his promises that the bonds would not require a tax increase, even though the county had a \$4.97 tax increase in the summer of 1969.

On May 14, 1970, the mayor of Doraville announced his opposition to several parts of the referendum on the grounds that Doraville was not getting its fair share of the improvements to be financed by the bonds. He charged, for example, that the tax digest of Doraville is 10% of the gross county digest, and yet, not one dollar in the bond issues had been earmarked for street improvements in Doraville. Also in May, a member of the DeKalb County Bond Commission from 1961 to 1966 who was also a member of the Republican Party Executive Committee of DeKalb County, mimeographed and distributed a pamphlet on the 1961 "bond scandal" and charged that the 1970 referendum would be a repeat of that scandal because "the same Establishment crowd is in power and control of the county Government".

Support for the bond issue was being organized by the information director for the board of commissioners. He directed an \$80,000 campaign which began six weeks before the election. It included a four-minute film (which cost \$6,000) which was shown to civic and fraternal organizations; speeches to these organizations; brochures which were distributed throughout the county; a newspaper insert which appeared in county papers and then was mailed to 40,000 residents; posters made by women's clubs and placed in county businesses; a nine-part series of articles in local newspapers; and two series of programs on Atlanta television. The director and his staff had support from the local Chamber of Commerce the League of Women Voters, other women's clubs,

and several local businesses. The Atlanta Constitution and Journal were both in favor of the referendum, and many of the county newspapers printed the nine-part series on the issues written by the information director. The support, however, was not enough. Eight of the fourteen items were defeated by the voters.

Interpretation of the Outcome

It is difficult to distinguish why the drainage bond failed from the question of why the entire referendum failed. To the extent that it is possible to focus on the drainage part of the total referendum package, however, informed observers and participants in the campaign offer four major explanations for its failure.

First, drainage is not a big problem for many people in DeKalb County. Some persons do live in flood plain areas where floods could cause substantial damage to their homes and some live in areas where there is currently improper drainage, causing flooding of basements and other inconveniences. But the number of persons who are seriously harmed by drainage problems is small in comparison to the total population of 400,000.

Second, in comparison with some of the other issues on the ballot, drainage was not a salient issue to the average voter. This is related to the first reason suggested above--that drainage was not a serious problem.

Third, the drainage improvements planned by the commissioners were not specified in the publicity on the referendum. Therefore, even those citizens who were seriously affected by drainage problems were not sure that the county planned to do something about their problem with the money from the bonds.

Fourth, one newspaper reporter suggested that there was a racial issue underlying the drainage issue. He argued that drainage improvements would open up for development (and particularly for multi-family dwelling units) certain areas of the county which had previously not been developed. Some residents allegedly fear that such developments might facilitate the in-migration of Blacks.

On the question of why the referendum as a whole was unsuccessful, the following arguments were advanced. First, all participants and observers of the referendum (both proponents and opponents alike) agreed that May 26 was a bad time for a referendum. This was a special election being held at a cost of \$30,000 when it might have been held in November at no extra cost. Further, there was another special election for school bonds planned for two weeks after this referendum, also at a cost of \$30,000. Finally, taxes had been raised substantially in 1969 and the taxpayers were not anxious to have another increase.

Some opponents and some supporters claimed that there was little or no publicity about the referendum and that the voters didn't understand the issues or the significance of the issues. Opponents of the referendum charged that the administration had consciously limited the publicity in order to limit the turnout.

Some county officials claimed that the low turnout contributed to the defeat of the referendum. (They also claimed that they had vigorously publicized the referendum in an effort to increase turnout).

Nearly all of the participants and observers agreed that there was a credibility gap between the administration and the electorate. Those

who were favorably disposed to the administration argued that this was an endemic feature of all administrations in DeKalb in recent years, or that it was a product of a previous administration. Those unfavorably disposed to the chairman of the board argued that he had created his own credibility gap by raising taxes and by not providing the voters with accurate information on the planned uses and means of financing of the proposed bonds.

The facts of the campaign provide some support for many of these suggested reasons. Some, however, like the alleged racial issues underlying and drainage part of the referendum, are rather difficult to substantiate. Others, like the question of the amount of publicity, are difficult to evaluate. (There was more publicity in DeKalb than there was in Avon, Ohio, but then, DeKalb is much larger.) Still others, like the suggestion that a low turnout contributed to defeat, are rather dubious in light of what appears to be the trend in other jurisdictions. Finally, the fact that drainage was only part of a total referendum package complicates the analysis.

On the basis of the analysis of other referenda, it seems that the most important reason for the defeat of the referendum package was the credibility gap of the county administration. Given this, there was little the administration could have done to improve the referendum's chances of passage. Political history shows that all recent administrations in DeKalb have suffered from this problem. Because each administration is unlikely to have a stable political constituency, opposition forces have every reason to attack the incumbent. Constant reiteration of opposition charges creates doubt in the minds of the electorate. Thus, even when events are not under the control of the administration, the administration nevertheless gets the blame from the electorate. (For example, the administration at the time of our study had no control

over the timing of the school election, and yet this was cited as one of the aspects of the "bad timing" of the referendum). This is not to say that the administration did not make political mistakes. Indeed, the tax increase in 1969, one year before the largest proposed bond issue in the county's history, was a serious error. But the important factor was that the administration had lost what little legitimacy it had when it assumed office. In this situation, it is unlikely that an increase in publicity or turnout would improve the chances of passage of the referendum.

Given the fact that the whole package was headed for defeat, and given the fact that drainage was not a serious problem for most voters, it was unlikely that the drainage issue could pass even if there were changes made in its presentation on the ballot. One of the changes now being considered by the commissioners is the specification of the improvements to be planned. But the two issues where this was done in May--streets and roads and parks recreation--both failed.

Examining the six issues which passed and the reasons for their passage may be useful. Three Juvenile Detention and Care Facilities, the County Facilities, the County Jail, and the Police Department--received support, probably from the current concern for law and order. The Garbage Disposal Facilities received support from current concern with pollution. The South DeKalb Hospital received support from residents of South DeKalb, who voted heavily against other issues on the referendum. Finally, the Fire Department is a popular county service which always receives support from the voters. Drainage improvements seem to lack this sort of appeal to the voters, and it is unlikely that changes in packaging will change this.

Conclusions

At least two conclusions can be drawn from the DeKalb County experience. First, it is extremely difficult to pass a referendum when there

is a credibility gap between the government and the voters; and second, it is extremely difficult to convince the voters that they ought to support with public funds the construction of what is essentially for private benefit.

To say that the DeKalb County administration had a "credibility gap" actually raises more questions than it answers. What is a credibility gap? How do we measure it? What causes it? In answer to the last question, there appear to be two phenomena which are frequently associated with credibility gaps: a loss of legitimacy and authority by important government officials and a breakdown of traditional political structures. These two phenomena are no doubt related, and both seem to be related to rapid population growth. A better conceptualization of the "credibility gap" phenomenon is required before the other questions can be answered.

One important characteristic of drainage improvements is that they are private goods. This is particularly interesting in light of the issues which passed in DeKalb. All of them were essentially public goods except for the South DeKalb Hospital, and the hospital had substantial support from residents who would be served by it. The important question is: how does a government convince the public to support bonds for private goods? Does it specify the benefits? Analysis of other bond elections indicates that this often creates more problems than it solves. Does it pay for the bonds by a special assessment or by user charges, rather than through general revenues? Assessment and user charges are complicated issues, and an administration with a credibility gap may have difficulty explaining the equity of its choice of assessment. Does it campaign more vigorously? There are techniques which the county administration did not use and which might have helped. For example, they might have surveyed the county to find out where their supporters and opponents were located, and then they might have made every effort within the law to get their supporters to vote. This might have put the administration in the position of registering Black voters and encouraging them to vote, which is still a

delicate issue in Georgia. Some comparative studies of drainage referenda which succeeded might shed some light on these questions.

OKLAHOMA CITY, OKLAHOMA

OKLAHOMA CITY

The referendum in question was one of thirteen bond issues offered to the voters of Oklahoma City, Oklahoma on May 28, 1968. The wording of the storm sewer referendum was as follows:

Shall the City of Oklahoma City, State of Oklahoma, incur an indebtedness by issuing its negotiable coupon bonds in the sum of five million, two hundred twenty-six thousand six hundred twenty dollars, (\$5,226,620) to provide funds for the purpose of acquiring land, rights-of-way, and equipment for and constructing and purchasing improvements, extensions and repairs to the Storm Sewer System, to be owned exclusively by said city, and levy and collect an annual tax, in addition to all other taxes, upon all the taxable property in said city sufficient to pay the interest on said bonds as it falls due, and also to constitute a sinking fund for the payment of the principal thereof when due, said bonds to bear interest at not to exceed the rate of five per centum 5% per annum, payable semi-annually, and to become due serially within twenty-five years from their date?

The vote in this storm sewer bond issue was 14,299 (49%) in favor and 14,626 (51%) against passage.

Background

The primary governmental unit with which we are concerned is the City of Oklahoma City. This sprawling city encompasses approximately 75% of Oklahoma County and spills over into three neighboring counties. The city proper currently has a population of 361,270 people, but surrounding suburbs swell the area population of metropolitan Oklahoma City to well over a half million. Table 1 contrasts the population figures and growth rates for Oklahoma City proper, metropolitan Oklahoma City, Oklahoma County, and the State of Oklahoma for 1960 and 1970.

Table 1. Population and Growth Rate for Oklahoma City and the State of Oklahoma			
Area	Population 1960	Population 1970	Growth Rate
Oklahoma City (Proper)	324,253	361,270	11.1%
Oklahoma City (Metropolitan)	511,253	629,305	22.9%
Oklahoma County	439,907	517,000	11.8%
State of Oklahoma	2,328,284	2,500,312	7.4%

This table indicates that Oklahoma, particularly the metropolitan area, has experienced more rapid growth than the rest of the State of Oklahoma. This data, however, is somewhat misleading because it does not take into consideration the annexations to metropolitan Oklahoma City in the past decade and the corresponding discrepancy between Oklahoma City in 1960 and Oklahoma City in 1970. For the past thirty years, suburban settlements such as Nichols Hills, the Village, Del City, and Warr Acres have been attracting residents from the central city. Yet, during the 1960-1970 period, Oklahoma City has brought some of these areas plus some other suburban areas under its governmental jurisdiction. Thus, of the increase in population of 37,000, the residents of the annexed areas comprise most of this growth.

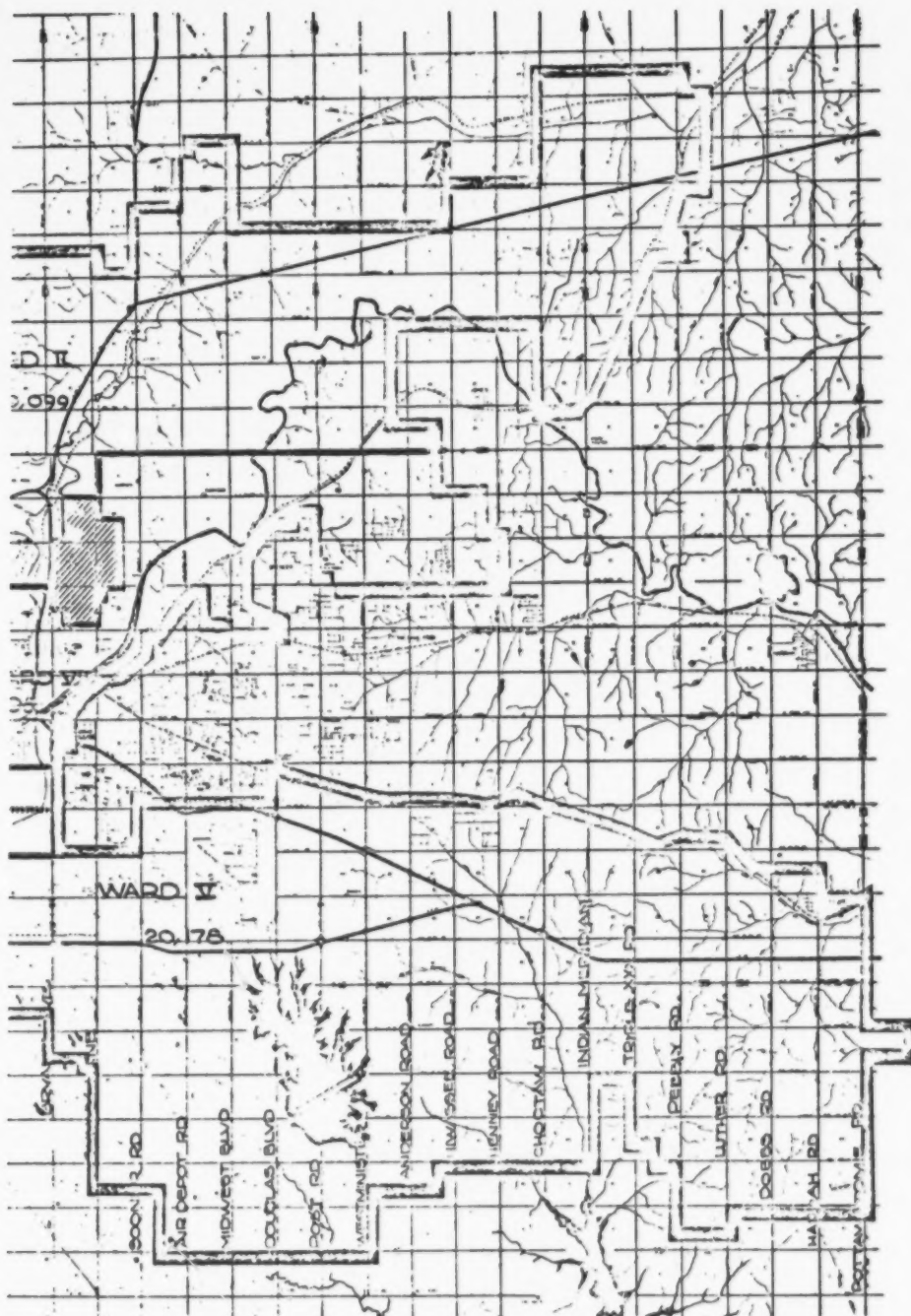
The total land area of Oklahoma City is over six hundred square miles, making it one of the two largest cities in the United States. This great land area is the end result of a decade of annexation battles in the courts. A little over ten years ago, a drive to increase the tax base of the city was initiated with the annexation of a small community northeast of the downtown area and on the outskirts of the city. After that annexation, the city grew tremendously in all directions until its city limits came into contact with the boundaries of several small cities twenty to thirty miles from the center of Oklahoma City. Fearing that Oklahoma City

would soon surround them, these small cities of Norman, Moore, Midwest City, El Reno, and Edmond embarked on annexation ventures of their own. Because of annexations to these cities, Oklahoma City is now almost entirely surrounded by a chain of cities which are large enough to prevent their annexation.

Oklahoma City was aptly named, for it has always been a city, never a town. On the day it was founded in April, 1889, during a land rush, it had a population of 30,000 people. It has always been the largest city in the state. Its oil and natural gas resources attracted money, thus assuring the early development of the city into a metropolitan area. Because of its central location and size, it was chosen as the State capital. Although Oklahoma is a rural state by nature, the problems which Oklahoma City faces are very familiar to the largest Eastern cities: a deteriorating downtown core, flight to the suburbs, and a mounting list of expenses. Urban renewal has been one of the hottest political issues in Oklahoma City for a decade. The present mayor is deeply pledged to restore the downtown area by qualifying the city for large amounts of Federal funds. During his administration, a large downtown playground-mall has been built and a huge convention center is currently under construction in hopes of drawing large amounts of outside capital from visitors to the city. Future plans call for major changes in almost every downtown building, and the total cost will be in the neighborhood of 300 million dollars.

Population Characteristics of Oklahoma City

Today the downtown area of Oklahoma City is inhabited largely by Black and Mexican-American families. It is almost entirely contained in the present Ward Seven (see Figure 1), although it does spill over into the southern part of Ward Two. The northern part of Ward Two has a predominantly white population, whose numbers more than offset the Blacks in the south. The eastern two-thirds is sparsely populated, having been allocated for future industrial use. The six wards remaining



have small numbers of Blacks. Wards One and Eight tend to be the areas of affluence, where several country clubs and many large estates are located. Southern Wards Three, Four, and Five are populated predominantly by blue-collar factory workers. There are several meat-packing plants in this area which provide employment. Ward Six contains many private businesses and some blue-collar workers.

A voter breakdown by parties and sex is given in Table 3 (see following page). It can be seen that the predominantly Black Ward Two has the highest Democratic registration; whereas, the more affluent Wards One and Eight possess the highest percentage of registered Republicans.

The numbers of non-whites in 1960 was 42,282 (13%) and it is believed that this number as well as the percentage has increased during the past decade. No figures for 1970 were available regarding this hypothesis; however, the city administration has estimated that 20% of the city is non-white.

The median family income of \$5,740 was fairly typical of the cities in the South Central area of the country in 1960. Although the median family incomes of Dallas and Tulsa are higher, the amounts are not significant. Table 2 gives family income distribution in Oklahoma City for 1960.

Table 2. Income Distribution/Oklahoma City	
Less than \$3,000/year	17.2%
\$3,000 to \$10,000	68.0%
\$10,000 to \$20,000	13.3%
Over \$20,000	1.6%

Table 3.

Oklahoma City, August, 1968

Ward	Demo	% D	Rep	% R	Ind	Amer	Male	% M	Fem	% F	Total
1	15,577	66.150%	7783	33.052%	168	20	11,127	47.252%	12,416	52.726%	23,548
2	16,040	74.030	5424	25.033	180	23	10,034	46.310	11,623	53.644	21,667
3	17,753	77.724	4890	21.409	155	43	11,153	48.829	11,680	51.136	22,841
4	17,101	86.356	2541	12.831	104	57	9,348	47.205	10,436	52.699	19,803
5	18,501	81.892	3808	16.856	205	78	11,112	49.186	11,468	50.761	22,592
6	14,771	79.133	3718	19.919	143	34	7,869	42.157	10,788	57.795	18,666
7	16,287	89.899	1673	9.234	153	4	8,140	44.930	9,957	54.959	18,117
8	15,615	73.214	5579	26.158	118	16	9,262	43.426	12,057	56.531	21,328
Total	131,645		35,416		1,226	275					168,562

B. Oklahoma City, August, 1970

1	115,477	62.497%	9015	36.403%	184	88	11,654	47.06%	13,106	52.923%	24,764
2	16,307	72.799	5764	25.732	243	86	10,357	46.236	12,039	53.745	22,400
3	17,445	73.888	5788	24.515	205	172	11,439	48.449	12,163	51.516	23,610
4	15,536	83.670	2676	14.411	134	222	8,679	46.741	9,877	53.193	18,568
5	19,050	78.317	4717	19.392	204	273	11,938	49.079	12,377	50.883	24,324
6	13,496	76.438	3879	21.969	147	134	7,409	41.963	10,239	57.991	17,656
7	15,529	90.490	1477	8.606	147	8	7,607	44.327	9,539	55.585	17,161
8	14,730	69.764	6142	29.089	147	95	9,139	43.284	11,969	56.687	21,114
Total	127,570		39,548		1,491	1,078					169,597

Government

Oklahoma City has a council-manager form of government. Under the city charter, the city council has the responsibility for appointing the city manager and can remove him from office by a two-thirds vote. He is responsible for all city appointments and acts as a liaison between the city council and each department of the city. The council can conduct no business with a city department without the consent of the manager. The mayor is the president of the council, and is responsible for the endorsement of all official bonds, contracts, etc, approved by the council. He may not vote at a council meeting unless there is a tie.

Proposed Bond Package of May 28, 1968

The history of the storm sewer bond issue begins in late 1966 when the mayor and the city council appointed a 100-man Citizens' Committee to decide on the substance of a package of bonds to be submitted to the voters in early 1968. The formation of this Committee was well-publicized, but public interest in the Committee's hearings was lacking. The Committee's specific instructions were to itemize all projects which it felt should be undertaken in the city, obtain preliminary cost estimates, and decide on the substance of a bond issue package costing about \$100,000,000.

Preliminary hearings had established that this \$100,000,000 figure would cover about one-tenth of the costs for all needed projects, so project priorities were established and used to fill the bond package. The final result was the listing given in Table 4.

The Campaign

In a time of voter apathy, the only projects which sparked any interest at all were the sanitary sewer and convention center. The fate of the other eleven propositions was closely tied to the outcome of propositions two and nine. The drainage or storm sewer bond, the subject of this report, was a minor issue in comparison with these two more costly issues.

Table 4. Summary Bond Package of May 28, 1968

Propositions	Cost
Streets and Bridges	\$ 12,143,100
Sanitary Sewers	34,945,665
Storm Sewers	5,226,620
Water Works System	13,189,460
Solid Waste Disposal	687,300
Municipal Maintenance Facility	700,000
Fire Stations	2,478,670
Traffic Control	3,241,153
Convention Facility	18,000,000
Airport	13,777,360
Parks and Recreation	7,454,560
Fairgrounds	1,400,000
Public Transportation	<u>2,104,500</u>
TOTAL	\$115,348,688

It was the self-appointed job of the Oklahoma City Chamber of Commerce to campaign for the acceptance of these issues. Because of Oklahoma City's previous tendency to pass large civic bond issues, the Chamber officials decided on a low-keyed approach, feeling certain that the bonds would pass. Little worry was given to a small, but fairly vocal opposition which sprang up in the Black wards, Two and Seven.

Led by a member of the 100-man citizens' committee, a dissident group publicly declared its opposition to the sanitary sewer issue. The opposition wanted a fairly dilapidated sewage treatment plant which was going to be improved by the bond issue to be moved because of its proximity to several schools and many homes in the area. If this were not feasible either technically or financially, they demanded no less than a complete renovation of the facility--not just the improvements which the bond slated for the plant. Although this group did not really organize

an opposition campaign, the Daily Oklahoman covered the story thoroughly and thereby publicized their views.

The other dissident note was heard in conjunction with the proposed convention center, proposition number nine. Preliminary work by the Citizens' Committee had established the site of the proposed convention center. Located near the downtown area, it was hoped that the center would be able to qualify for urban renewal funds and reinforce the economic stability of the deteriorating downtown area. This proposition was opposed by a small group of ultra-conservatives, led by the wealthy land-owner who held the title of the land on which the center was to be built. The group never mounted an effective opposition, although they did put out a small, sparsely distributed pamphlet.

By the time of the election, the small number of voters who came to the polls approved only the fire station proposal. (The results of this election are given in Table 5). Observers credit this issue's success with voter identification of a social need for the project.

Conclusions

The small but well-publicized opposition to the sanitary sewer bond and the disunity among the members of the citizens' referendum committee apparently raised doubts about the bond package in the voters' minds. These doubts were not offset by information from proponents of the package concerning the social utility of the proposed issues. Opponents to the package argued that there was very little in the nature of the project which would have satisfied pressing social needs. There was no clear need for the convention center, and improvements on the sanitary sewer system were more desperately needed elsewhere.

Opponents and proponents of the bond issue argue that low voter turnout helped bring about defeat of the bond package. The factor of low turnout

Table 5.
TABULATION OF RETURNS

OKLAHOMA CITY SPECIAL ELECTION, MAY 28, 1968

* Precinct	1	2	3	4	5	6	7	8	9	10	11	12	13													
YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO													
1	1322	2724	2335	3553	2171	3115	2210	3063	2148	3133	2295	2884	2009	3237	2164	3106	2493	2733	2453	2606	2042	2615	2505	2744	2470	2762
2	1000	2031	1319	2342	1660	2136	1886	2101	1435	2137	1723	2036	1600	2186	1700	2070	1645	1303	1653	1615	1763	1655	1677	1379	1821	1653
3	1340	1633	2400	1943	2230	1922	2270	1775	2271	1779	2335	1694	2143	1917	2248	1795	2446	1571	2394	1626	2305	1726	2435	1501	2433	1590
4	1492	1024	2140	1193	1037	1090	1654	1054	1927	1082	1666	1021	1665	1153	1929	1071	2021	971	2004	967	1375	1922	2025	934	2033	1011
5	1104	1204	2664	1711	2539	1537	2539	1510	2511	1592	2612	1475	2366	1740	2529	1556	2707	1363	2650	1432	2550	1520	2391	1377	2736	1640
6	1013	1577	1303	1517	1173	1339	1193	1343	1172	1359	1230	1297	1166	1382	1174	1305	1261	1251	1271	1366	1240	1237	1273	1255	1233	1303
7	1049	502	1391	542	1236	507	1233	491	1225	503	1236	477	1218	502	1226	477	1178	430	1231	439	1220	489	1223	470	1210	400
8	1003	2301	1324	2093	1359	2673	1731	2537	1670	2566	1767	2546	1609	2715	1689	2626	1894	2420	1737	2451	1792	2500	1694	2401	1803	2511
TOTAL	11300	16059	14523	14871	14530	15170	13976	14659	15859	15046	15263	15331	15721	15954	12922	14007	12722	12951	12951	12951	12951	12951	12951	12951	12951	12951
TOTAL	24321	31501	25925	23756	28836	26800	23853	29566	26381	28597	26381	24612	23713													

* For key to proposition # and title of proposition, see Table 4, Col. 1, "Proposition."

TOTAL VOTERS - 35,452
OKLAHOMA COUNTY
33,704
OTHER COUNTIES

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E. J. ...

helped bring about defeat of the bond package. The factor of low turnout is not an independent cause however; the disinterest of the uninformed voter in the package as a whole contributed significantly to this low turnout.

This report is mainly concerned with events surrounding the storm sewer bond of Oklahoma City, but it is very difficult to distinguish the causes for its failure from those pertaining more directly to other issues in the package. However, the drainage issue which failed can be contrasted to the construction of three fire stations, the only issue which passed. Fire stations are perceived by voters as important to their own lives. Drainage, on the other hand, is not a very interesting or salient issue to the average voter. The presence of storm sewers cannot be seen as affecting his life as directly as fire stations, particularly when, as those concerned with the bond proposal point out, the storm sewer deficiencies were minor in comparison to other bond proposals.

Proposed Bond Package of July 16, 1968

After this election, the mayor, City Council, and the Chamber of Commerce declared that the defeated bonds were vital to the future of the city and began efforts to hold another bond election on these same bonds. As there were no restrictions to keep them from doing this, they chose a date two months later, July 16, 1968, for the second election.

The Campaign

Opposition remained essentially the same. As one might expect, one new argument being heard was that the administration was acting "high-handed" toward the voters in resubmitting the proposals after they had been defeated once.

A second criticism of the July, 1968 bond package concerned the proposed fairgrounds bond issue for \$1,400,300. It was pointed out by the two prime opposition groups that the fairground was governed by a private concern. "Why," they argued, "should the general public pay for improvements to some private group's land?"

The Oklahoma City Chamber of Commerce countered the opposition to the administration's resubmittal of the proposal by appealing to the voters' sense of urgency, saying that these proposed projects were desperately needed. The voters failed to let their voice be heard in the election two months previously, but luckily they were going to get another chance. The Oklahoma City Chamber of Commerce said that the project would not have been brought up for a second time and placed before the voters of Oklahoma City if the projects were not desperately needed. They claimed further that a true test of the will of the people had not been provided in the previous election, so that the results of the upcoming election were of paramount importance.

The Chamber of Commerce chose not to answer the charges that improvement to the fairground was governed by a private concern. They tried instead to persuade voters to vote for the more widely-publicized sanitary sewer system and the convention center. Officials privately expressed the hope that the tide of voters approving these issues would carry over into other areas and provide a winning margin for all bond issues.

The Oklahoma City Chamber of Commerce substantially changed its campaign tactics for the second election. A new advertising agency was hired by the Chamber of Commerce to put on a high pressure campaign. This agency used every means of advertisement available: radio, television, handouts, flyers, door-to-door campaigning, telephone campaigning, and public meetings, "the works", according to the vice president of the Chamber of Commerce.

The Chamber of Commerce also distributed fact sheets to each ward, listing what specific projects would be undertaken in that particular ward and how much money would be spent. Chamber leaders indicate that this action was necessitated by overwhelming the Black vote against the previous sanitary sewer bond. The fact sheets were widely distributed in the two Black wards.

Election Results

The results of the second election, held on July 16, 1968 are given in Table 6. The voter turnout was increased by about 30% over May, and all but the fairgrounds bond issue passed. The electorate voted 3-1 in favor of most of the bonds, with the exception of the fairgrounds issue. It is interesting to observe this phenomenon in the Black Seventh Ward; although all bonds were defeated both times in this ward, the additional voters in the July election voted yes by a 2-1 margin.

The most obvious difference between the May and July elections was the existence of a campaign for the second package. Both opponents and proponents of the package agreed that the Chamber of Commerce's advertising campaign, including the distribution of ward fact sheets, changed the outcome of the election. The campaign clearly specified the problems and equated them with social needs. This decreased the misgivings that some voters had about the administration's ability to plan for the future needs of the Oklahoma City area. Proponents stated that they led an "information" campaign, while opponents stated that the Chamber's pamphlets were distortions, but both agreed that the above result was accomplished.

A second difference between the May and July, 1968 elections was the feeling which emerged and was voiced by members of the opposition that voters felt that nothing could stop the city administration from holding such reelections until the package passed. Even the Chamber of Commerce conceded this point and argued that a quick approval would save money used to hold more special elections.

Table 6.
TABULATION OF RETURNS

OKLAHOMA CITY SPECIAL ELECTION, JULY 16, 1968

PROP.	ST. & BR.		REG. STATUS		ST. STATUS		WATER		DISPOSAL		MAINT.		TRAFFIC		OCIV.		AIRPORT		PARK		PAINTED		TOTAL
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	
1	4751	1529	5066	2665	4457	2422	4207	2428	4457	2399	4235	2571	4452	2400	3939	2669	4060	2765	4725	2596	3691	2396	4046
2	3805	1480	3451	2072	3014	1903	2655	1921	3008	1688	2837	2019	2932	1937	2704	2146	2726	2119	2838	2023	2645	2157	2779
3	2431	1939	2050	2870	2615	2650	2560	2572	2576	2555	2425	2773	2570	2657	2269	2833	2383	2020	2446	2766	2276	2015	2342
4	1727	1050	1315	2333	1336	2124	1571	2137	1624	2101	1484	2130	1578	2108	1415	2230	1440	2217	1503	2160	1393	2231	1450
5	2122	2130	2720	1537	2423	3051	2306	3142	2386	3075	2198	3228	2361	3073	2085	3035	2198	3232	2328	3112	2059	3258	2050
6	2422	1026	2101	1300	1889	1175	1819	1203	1803	1164	1772	1234	1811	1206	1725	1281	1701	1299	1719	1275	1673	1316	1793
7	143	1276	1027	1553	907	1495	864	1483	863	1486	837	1498	845	1478	235	1487	825	1426	855	1470	825	1436	859
8	4059	1406	4244	1571	3681	1762	3011	1779	3560	1742	3457	1664	3526	1771	3344	2607	3360	1973	3433	1929	3279	2053	3436
TOTAL	21781	23464	20522	20112	20437	19286	20175	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326
YES	21781	23464	20522	20112	20437	19286	20175	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326	18326
NO	12732	16130	16582	16796	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512	15512
TOTAL	34513	41594	37204	36908	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949	36949

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E. Ray Lofgren
E. Ray Lofgren, Mayor

There was unanimous agreement that the sewer and convention center bonds carried the other bonds--hence, the passage of the storm sewer bond issue.

Special Election - June 9, 1970

After the July adoption of all but one of the bonds, the administration of Oklahoma City looked forward to selling the bonds to investors; however, rising interest rates made the sale of all the bonds at the 5-1/2% rate set by the City Charter impossible. The City Council and the mayor proposed a special charter election to be held early in 1970. Its purpose would be to propose a raise in the municipal bond interest rate from 5-1/2% to 8%. However, since all bonds from the July 16, 1968 election were not sold, the Charter also provided that the remaining bonds must be placed before the electorate again. The resulting package was scheduled for balloting on June 9, 1970, and is summarized in Table 7.

Table 7. Summary of Special Election, June 9, 1970	
Propositions	Cost
Streets and Bridges	\$ 8,168,000
Sanitary Sewers	32,475,665
Storm Sewers	1,666,620
Water Works System	13,189,460
Solid Waste Disposal	282,300
Municipal Maintenance Facility	200,000
Fire Stations	1,738,670
Traffic Control	2,936,153
Airports	8,972,360
Parks and Recreation	4,909,560
Municipal Libraries	1,100,000
Public Transportation	1,624,500

Campaign

The third campaign for the bond package was again initiated by the Oklahoma City Chamber of Commerce with the help of an outside agency. Although very similar to the second 1968 campaign in its style, the 1970 campaign attracted far less interest. Local officials and even previous political opponents felt that the voters would be very reluctant to overturn a previously approved but partially completed bond issue. Indeed, the Chamber of Commerce underplayed the twelve bonds relative to the charter amendment, preferring to spend most of their time on the more subtle charter amendment proposal, realizing that it was the key to the package. No organized opposition emerged during this campaign, but the conservative opposition apparently maintained its posture of opposition to all urban renewal projects.

As before, the Chamber of Commerce sponsored television and radio programs promoting the election. It conducted door-to-door campaigns, telephone surveys, regional ward fact sheet distribution, extensive brochure mailings, as well as relying on standard techniques such as posters, billboards, newspaper advertisements and articles, and free rides to the polls. Even this extensive effort, however, did not bring out the crowds of voters that the second campaign had in 1968. The results are given in Tables 8 and 9.

Table 8. Tabulation of Returns Oklahoma City Special Election Charter Amendment, June 9, 1970		
Ward	Yes	No
1	2,425	741
2	1,701	562
3	1,356	661
4	776	725
5	1,297	816
6	1,250	532
7	542	211
8	2,052	669
Total	11,399	4,917

Table 9.

TABULATION OF RETURNS

OKLAHOMA CITY SPECIAL ELECTION, JUNE 9, 1970

PROP.#	ST. & BP.		SAN. SEWER		ST. SEWER		WATER		SOLID WASTE		MAINT. FAC.		FIRE		TRAFFIC		AIRPORT		PARKS		LIBRARY		PUBL. TRANSP.	
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
1	1836	579	2783	908	2634	846	2625	850	2650	833	2554	901	2671	794	2637	837	2500	951	2541	911	2502	951	2481	965
2	1331	458	1764	643	1668	606	1654	613	1669	604	1620	639	1666	596	1644	617	1577	668	1610	637	1580	661	1577	670
3	1048	538	1688	863	1609	808	1580	823	1611	798	1547	850	1638	770	1599	803	1503	894	1541	850	1495	890	1460	927
4	583	613	869	862	789	800	781	794	786	795	752	816	803	769	775	796	731	832	736	817	718	840	737	825
5	961	654	1524	1092	1478	1035	1447	1052	1461	1049	1425	1074	1491	1023	1475	1026	1394	1100	1434	1062	1414	1082	1363	1130
6	1020	446	1117	599	1058	540	1050	544	1051	537	1012	565	1049	544	1043	544	1005	569	1003	562	986	576	1007	567
7	432	140	656	228	613	210	604	211	608	207	589	213	601	200	602	201	588	207	586	206	594	205	600	203
8	1661	564	2123	786	2040	703	2007	693	2041	708	1972	739	2035	695	2014	704	1942	755	1946	746	1904	785	1920	770
TOTAL																								
YES	8872	3992	12524	5981	11889	5548	11748	5580	11877	5531	11471	5797	11954	5391	11789	5528	11240	5976	11397	5791	11194	5991	11145	6057
NO																								
GRAND TOTAL 12864																								
			18505		17437		17328		17406		17268		17345		17317		17216		17188		17165		17202	



E. RAY LONG, CITY CLERK

Conclusions

Two conclusions can be drawn from the Oklahoma City experience. First, it is difficult to convince the voters that they should support something for which a need has not been demonstrated, or that they should support, with public funds, what is essentially a private venture. (Witness the rejection of the fairgrounds proposal in both the May and July 1968 elections).

Second, there is in the Oklahoma City experience of July 1968 one of those rare cases where a local government was able to reverse a defeat at the polls by an increased level of campaign activity, even while facing an opposition. In our sample of 40 cases, there were only two instances of a successful bond election where there was an opposition; and only one case of a successful election when there was a high level of campaign activity in the face of opposition. In this particular case, it would appear that the officials of Oklahoma City accurately analyzed the failure as being caused not by a significant division of opinion in the community, but rather by the general lack of any opinion at all. Thus, all that was needed was a campaign by the Chamber of Commerce pointing out the benefits to be derived from the bond issue, and it passed.

PETALUMA, CALIFORNIA

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PETALUMA

This bond issue was submitted to the voters of the Town of Petaluma, California on January 18, 1966. The wording of this sanitary sewer bond issue was:

"Shall the City of Petaluma incur a bonded indebtedness in the principal amount of \$2,350,000 for the acquisition, construction, and completion of the following municipal improvement, to wit: Sewer system improvements including additions to present sewage treatment plant and appurtenant facilities additional to the sewage collection system, construction of new pump stations, collection mains, trunk sewers, outfall lines, interceptor sewers, force mains, pipes, pumps, machinery, manholes; lands, easements, and rights of ways; and other works, property, or structures necessary or convenient for sewer system improvements for the City of Petaluma?"

The purpose of this bond issue was to extend and remodel the present sewer system of Petaluma. A two-thirds majority of those voting was needed for passage of the proposal, according to the town charter, and the final vote was 2,793 (84%) in favor and 520 (16%) against passage.

Population Characteristics of Petaluma

The primary governmental unit involved in this bond issue is the city of Petaluma, California. It is a moderate sized city located approximately thirty miles north of San Francisco. In the past, the area was heavily dependent on agriculture for its economy. Now Petaluma is the center of the dairy industry of the Northern California-San Francisco Bay area and supplies eighty percent of all the milk and milk products for the nine-county San Francisco Bay area. Although the number of people involved in the dairy industry has decreased about 10% over the past ten years, this industry still produces over \$35 million per year in wages.

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Since 1950, the city has been deluged with white- and blue-collar workers from the San Francisco area. In 1950 the population of Petaluma was 10,135, and by 1960 it had increased to 14,035. During the decade between 1960 and 1970, the population of Petaluma increased by 75% to its present figure of 24,570.

This population rise has been associated with the rise in employment opportunities in the Bay area. Although Petaluma is thirty miles from San Francisco, many of its residents travel this distance daily to their jobs. It is believed that most of the Petaluma residents who follow this pattern are recent arrivals to the area who have immigrated within the past ten years.

This mobility of the population stems directly from the excellent highways provided for the area. The Redwood Highway, (U.S. 101), the main artery for northbound traffic from San Francisco, passes through the eastern section of Petaluma. The highway divides the city of Petaluma into two parts: the older section of the city, including the downtown area to the west and a new and rapidly growing housing development to the east. (See the map of Petaluma, Figure 1.) Most houses in this eastern part of the city have been built within the past ten years. Residents new to Petaluma since 1960 comprise most of the development's population.

The housing situation in Petaluma is summarized in Table 1.

In 1960, 92% of all houses were single family. This percentage has increased slightly during the past ten years. There are almost no multi-family dwelling units in the city. In 1960, 83% of all houses were owner-occupied. However, the tendency of new commuting residents to rent rather than own homes lowered this figure to 71% in 1970.

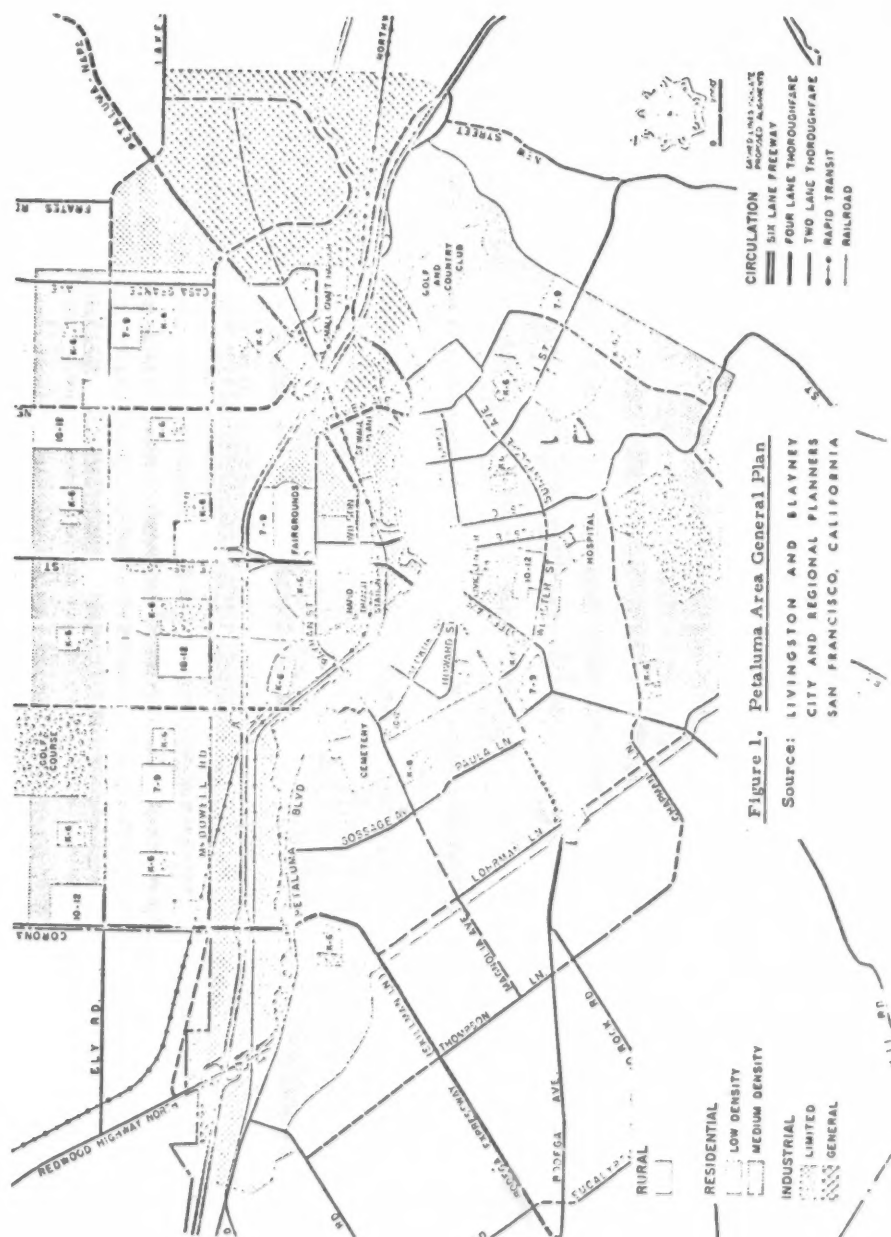
Table 2 gives the percentages of rental houses in Petaluma within monthly rental categories.

Table 1. Housing in Petaluma (1969)	
House Classification	Number
New Home (less than 5 years old)	1689
5 to 20 years old - sound	2524
2 to 20 years old - deteriorating	67
5 to 20 years old - dilapidated	29
21 to 40 years old - sound	1111
21 to 40 years old - deteriorating	113
21 to 40 years old - dilapidated	22
Over 40 years old - sound	1562
Over 40 years old - deteriorating	271
Over 40 years old - dilapidated	51
Unclassified	9
Source: State of California Department of Finance	

Table 2. Breakdown of Rental Charges for Rental Houses in Petaluma	
Rent Category (\$ per month)	% Rental Houses/Category
Under \$60	10%
\$61-\$75	21%
\$76-\$100	24%
\$101-\$125	25%
\$126-\$150	13%
\$151-\$175	44%
\$176-\$200	2%
Over \$200	1%

The median rental is less than \$100 per month, which is substantially less than rentals around the San Francisco area. This is viewed by many in the city as a prime reason for Petaluma's rapid growth in the past decade.

Forty-five percent of the population is under 20 years of age, whereas 9% is over 65. This latter figure represents a decrease from the 12% over 65 in 1960. There also was a slight increase in the numbers in the 21 to 34-year-old age group: from 18% in 1960 to 20% in 1969. The



median age has dropped from 27 to 26 in nine years. These statistics reflect the influx of the young families during the 1960's, a trend which has created the need for more schools and additions to existing schools in the city.

Table 3 gives occupation breakdowns and the number of Petaluma residents in each occupation classification.

Table 3. Occupational Breakdown for Petaluma (For Principal Wage Earner Only)		
Occupation	Number	%
Professional, technical, and kindred workers	695	10.4
Managers, officials, and proprietors including farmers and farm managers	694	10.4
Clerical and kindred workers	657	9.7
Sales workers	497	7.4
Craftsmen, foremen and kindred workers	1393	20.8
Operatives and kindred workers	630	9.3
Service workers including private household	563	8.4
Laborers, including farm	400	5.9
Retired - unemployed	928	13.8
Not in labor force	88	1.3
Unclassified	<u>173</u>	<u>2.5</u>
TOTAL	<u>6718</u>	<u>100.0</u>

Blue-collar jobs clearly predominate in Petaluma, but white-collar jobs are increasing. Just twenty years ago, the economy of the region was almost exclusively agricultural. Now, many more occupations have been opened, increasing the heterogeneity of the city's population. Still, there are very few non-whites in the area. The 1960 census showed 109

out of a population of over 14,000. The number has increased in the past ten years, but the percentage has remained constant.

Table 4 gives family income distribution for 1960. The median family income has increased in the past ten years, and its increase is greater than the national increase. No figures for 1970 are available, but it is

Table 4. Family Income Distribution - 1960	
Less than \$3,000/year	19%
\$3,000 to \$10,000/year	62%
\$10,000 and over	19%
Median: \$5,957	

thought that the median family income now is around \$7,500, and that the percentage making less than \$3,000 per year has decreased to approximately 10%.

Government of Petaluma

Petaluma has a council-manager government. The mayor, elected at large every four years, heads the city-council and is a regular voting member of it. He has no unique powers which distinguish him from other members of the council.

The present mayor was elected in 1964 and reelected in 1968, both times by large margins. A nonpartisan mayor, she is the first woman to be elected to public office from Petaluma. Her platform during her election campaigns had two major points: enlargement of the Petaluma water and sewer system to handle the increased sewage brought about by the entry of new residents in the city since 1960, and the encouragement of desirable industry to improve Petaluma's economic base. Although attracting new industry for the purpose of gaining tax dollars and

new jobs was important, the mayor believed it could pose hazards greater than those caused by not having those tax dollars. Undesirable development included, among others, oil companies and certain chemical companies. These two planks of the mayor's platform were mutually reinforcing: new sewer construction would also be provided for the new industry which would provide new jobs and more people who would need new sewers. These two planks were skillfully intertwined in 1964, and she had no effective opposition.

Petaluma's Sewer System Prior to 1966

The rapid growth of the area east of U.S. 101 had caused a burden on the town's sewer system. During winter months, (the rainy months for that section of California) the problem became particularly acute. A rising water table caused seepage into the city's leaky pipes and doubled or tripled the normal flow volumes. This resulted in the overflow of raw sewage from the treatment plant which went directly in the Petaluma River, allowing the unprocessed affluent from the treatment plant to contaminate the Petaluma River was the only alternative to having it spill out from manholes right on the city's main street.

No new treatment plant had been constructed when the houses east of U.S. 101 were built, and only sewer lines had been provided. These were tied into the system of the western part of Petaluma, and it was only a matter of time before the system's capacity was exceeded. This occurred in 1963.

In a report issued that same year, the engineers of Petaluma's "General Comprehensive Plan" noted that sewer lines were inadequate for the present population. Future residential, commercial and industrial growth was limited by the capacity of the sewer system. Accordingly, they mapped preliminary plans for new sewer facilities designed to handle the eastern residential development as well as the sewage anticipated from two areas set aside for industrial development.

The first of these areas lay between the railroad tracks and the Petaluma River. It consisted of commercial establishments and some housing, mostly dilapidated and its sewers were presently untrustworthy. Leaks were quite common, and ruptures occurred frequently. The plan called for a rezoning of this area to industrial use, a program similar to urban renewal to refurbish the sector, the repair of existing sewers, and construction of new sewer lines to handle the proposed new industries. The existing treatment plant was to be remodeled and increased in capacity.

A second, more controversial industrial zone was proposed in the eastern part of Petaluma, south of the new houses, east of the intersection of California Highway 116 and U.S. 101. The construction of sewer and water lines was proposed to meet this area's future needs. This aroused some controversy among members of the 1963 City Council who unanimously felt that sewage lines for an undeveloped zone were a luxury, and therefore not as pressing as the more urgent situation in the first industrial zone and the new housing development.

The Proposed Bond Issue

After the new mayor took office in 1964, she hired an engineering firm and a financial advisor for preliminary planning of a sewer bond proposal. They issued a report before the end of 1965 recommending that the bond issue include enlargement of the central treatment plant to three times its present capacity, construction of a smaller treatment plant for the eastern sector of town, and city-wide reconditioning of sewer lines. The controversial sewer plans for the second industrial zone were dropped, according to city officials, in the interests of economy. They wished to make passage as easy as possible without having an unpopular and costly issue drag the entire bond issue down to defeat.

The total project cost was \$2,350,000, to be financed through the sale of general obligation bonds, which would be repaid with both tax revenue and a slight increase in the monthly sewer charges.

There were two major reasons for recommending general obligation bonds over straight revenue bonds. First, property taxes in Petaluma were very low - only about \$3.00 per \$1,000 of assessed valuation. City officials felt that a small increase in the property taxes would not be offensive to the voters. Furthermore, an old general obligation bond would be retired in 1966, normally resulting in a slight decline in the tax rate. Since the sewer bond proposed in the January election would follow immediately the retirement of the old bond, a substantial revenue could be realized from a very small tax increase of \$.15 per \$1,000. Additional income required to repay the bonds would be obtained from a \$.50 increase in the monthly user charges. Finally, it was felt that general bond indebtedness would make the acquisition of federal funds easier than would revenue bond indebtedness.

The Campaign

The mayor and members of City Council were restrained by city charter from taking an active part in the campaign for the sewer, even though it was general knowledge throughout the town that they unanimously supported it. The fight for adoption of the program was led instead by three independent groups, each of whom had very similar arguments.

The Sewer Bonds for Progress Committee, a citizens' group, published three pamphlets outlining all the arguments which appeared during the campaign. Briefly, the arguments for passage were:

Sewer improvements are needed to handle increased population.

Sewer improvements are needed to enlarge treatment plant so that system does not pollute the Petaluma River and meets state health standards.

Sewer improvements are needed to stop overflowing of sewage into streets.

Sewer improvements are needed to attract new industry and citizens.

An interesting feature of the Petaluma Charter allows advertising in the form of printed ballot arguments to be distributed within polling places. The Sewer Bonds for Progress Committee presented a printed argument which was approved by the city clerk for distribution in polling places.

A second group, the League of Women Voters, coordinated its activities with the citizens' committee and both groups went door to door, passed out the three pamphlets, provided rides to the polls, took out newspaper advertisements and placed posters in prominent places around the city.

A third, less active, group was the Sonoma County Taxpayers Association. This is a county-wide organization with branches in each of the twelve cities in the county. Although small in number, the members of the association generally are among the wealthy and influential residents of the county. Real estate and farming interests were known to have a strong voice in determining the stand of the association. This group supported the proposition because of the benefit to land values in Petaluma. However, it qualified support with the stand that taxes should not be raised, and that users' fees and installation charges should be utilized instead to repay the bonds.

No group in opposition to the bond issue emerged. There was some opposition, but none of it was organized. No particular group seems to have been more opposed than another, with the possible exception of the old people who feared a rise in taxes and sewer charges, but this is only a hypothesis advanced by the mayor.

California state law requires a 2- to-1 majority for the adoption of any bond issue. When the results were in, it was apparent that this had been achieved: 84.3% voted for acceptance. The election figures are given in Table 5.

Table 5. Election Results of January 18, 1966	
Number of Registered Voters	7588
Number of Voters Voting	3315 (43.7%)
Total For	2793 (84.3%)
Total Against	520 (p5.7%)
Total Blank	2

On the precinct level, the percentage of voters in favor of the sewer bond varied 9% around the figure of 84.3% for the entire city. No apparent pattern exists, which leads us to conclude that no particular section of the city favored or opposed passage more than any other sector of the city.

Interpretation of the Outcome

Three reasons for passage of the bond issue were offered by the informants interviewed for this study. First, and most important, was the professional quality of the campaign. Persons subscribing to this view pointed to the fact that several outside, (and therefore, presumably unbiased) companies had assessed the Petaluma sewer situation and had offered their recommendations that the bond be passed. Other outside experts at the sanction of the citizens' sewer committee and the League of Women Voters, presented informative programs which attempted to answer all questions posed by the electorate. Even persons not associated with the groups promoting passage mentioned the fact that the information flow to the voters was sufficient to answer most questions about the bond issue. Others attributed the success of the Petaluma sewer bond issue to widespread recognition of the need for the projects. Sewage overflow in the downtown area was particularly noticeable. The pollution of the Petaluma River was also cited, but most people interviewed believed that this was minor in comparison to the flooding of the downtown area.

Further, voters felt that the \$2.3 million bond represented only the absolute necessities. No frills were included in this package, such as the sewers for the second industrial zone in the eastern part of the town. The recognition of the need for the sewer project is reflected, respondents declared, by the high turnout of voters (43.7%) for the election.

The final reason cited for passage was the unity of the city administration and business leaders, who were represented in the citizens' committee. Mention was made that one newspaper advertisement listed all important people within Petaluma as on record in supporting the sewer issue. Voters, our informants felt, became confident of the actions of the city administration when the administration itself possessed strong self-confidence.

Conclusions

Two factors seem to be most important in the success of the Petaluma bond election. First, city officials in Petaluma were united. There were no dissident members of the administration or the city council who could legitimize opposition to the election. Second, the administration wisely eliminated the one possible source of opposition from the proposals for sewer improvements--the controversial sewer line to the industrial zone in the eastern part of the city. Since there was no opposition, the administration did not need to campaign, and the bond issue passed easily.

ROUND ROCK, TEXAS

ROUND ROCK

The \$281,000 sewer bond proposition which was placed before the electorate of Round Rock, Texas on December 5, 1968, appeared as follows:

PROPOSITION NO. 2

"Shall the City Council of the City of Round Rock, Texas, be authorized to issue the bonds of said City in the Amount of \$281,000, maturing serially over a period of years not to exceed forty (40) years from their date, bearing interest at such rate or rates as shall be determined within the discretion of said City Council, for the purpose of constructing extensions and improvements to the City's sewer system to be issued in accordance with and secured in the manner provided by Article III, et seq V. A. T. C. S., as amended, each bond to be conditioned that the holder thereof shall never have the right to demand payment of said obligation out of funds raised or to be raised by taxation, and secured by a lien on and pledge of the net revenues from the operation of the City's combined waterworks and sewer system? "

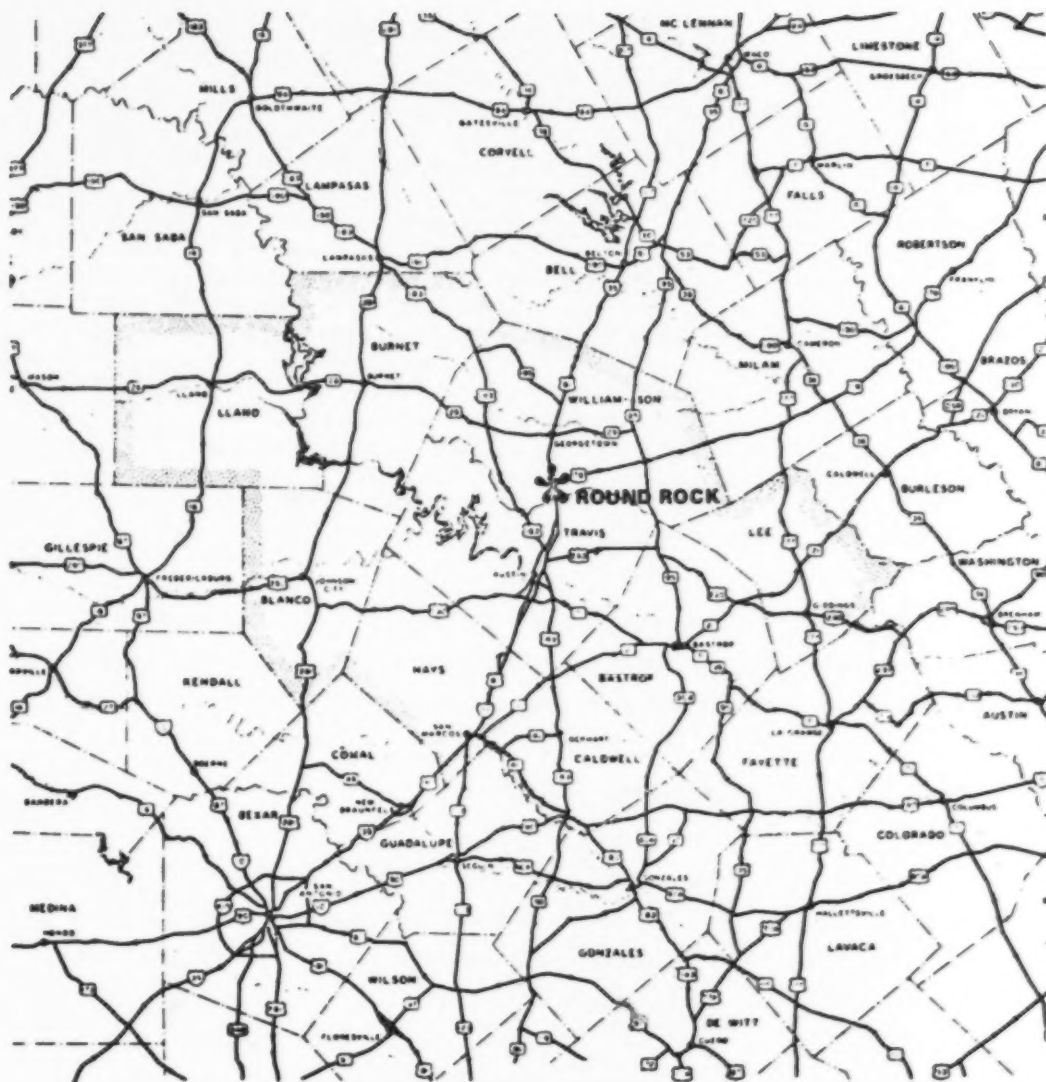
The vote on this proposition, involving both the construction of new sewer lines and pumping stations and the replacement and reconditioning of old lines, was 146 (43%) in favor and 196 (57%) against passage.

Population Characteristics of Round Rock

Round Rock, the primary governmental unit for this election, is a city of 2,687 people located in the middle of Williamson County, as shown on the map following. Williamson County lies in the Blacklands and Grand Prairie areas of central Texas.

Following its establishment in 1850, Round Rock was predominantly white. Slavery did not exist in the area at any time and residents were mainly small farmers and ranchers. After the Civil War, however,

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ROUND ROCK COMPREHENSIVE CITY PLAN
AUSTIN ECONOMIC REGION

Blacks from the deep South immigrated in small numbers to provide a labor force for the increasing agricultural production in the area. They were followed by Mexicans after the turn of the century. By 1930, the relative proportions of these three ethnic groups were established, with each comprising close to one third of the total population. This ratio has changed little to date.

The population of Round Rock from 1920 to 1970 is presented in the table below.

Population of Round Rock, Texas 1920 to 1970			
1930	900	1950	1,438
1930	1,173	1960	1,878
1940	1,240	1970	2,687

This table clearly indicates the increase in Round Rock's population, particularly during the last two decades. In contrast to Round Rock's growth, Williamson County as a whole has decreased in population during the last 20 years because it has been primarily an agricultural region.

From 40% to 60% of Round Rock's population increase in the last decade can be attributed to the immigration of people working in Austin who are new to the area. Austin, the state capital, has had a 32% population increase since 1960 and its suburbs are located only six miles from the Round Rock city limits. Interstate 35 passing through both Round Rock and Austin, will be a key factor in any future growth.

A second factor contributing to Round Rock's population growth is its relatively low tax rate. This is illustrated by Table 2 which gives the tax rate for Round Rock and six surrounding cities and towns.

A third factor contributing to Round Rock's population growth is the presence of limestone, the major resource of the area which has been res-

possible for a large part of the city's growth, particularly in the past. The major employer in Round Rock is the Round Rock Lime Company which currently employs 100 persons and, according to the personnel director, anticipates an increase in employment in the future.

Table 2. Tax Rates for Selected Texas Cities

City	Total Assessed Valuation	Assessment Rate (%)	Total Tax Rate (\$/\$1,000)	Adjusted Tax Rate
Austin	\$808,812,140	67.5	12.90	8.71
Bartlett	1,303,200	20	10.00	2.00
Georgetown	10,771,880	60	6.50	3.90
Hutto	5,855	50	10.00	5.00
Round Rock	1,752,520	21.7	15.00	3.25
Strawn	612,388	33.3	14.50	4.83
Taylor	17,921,514	50	10.00	5.00

Geographic Features of Round Rock

The Balcones Fault, running north-south through Williamson County, divides Round Rock into two distinct land areas and contributes directly and indirectly to the cost of developing the area. New construction is limited by the difficulty of finding adequate support for foundations. Sanitation problems are greatest in this area, due to seeps and springs which result in a low absorption rate and substantial clay deposits. Consequently, septic tanks in this area are unsuitable. Principal drainage features in the County include Brushy Creek, which passes through northern Round Rock, Berry Creek, and the San Gabriel River. Brushy Creek and Lake Creek, which meander through the city from west to east, contribute significantly to the cost and difficulty of development by limiting accessibility from one area to another. Together with the Balcones Fault, they have contributed to expensive scattered patterns of development. In addition to these constraints, the western side of Round Rock is limited to industrial development because of the dust from limestone mines in the area.

Housing Conditions in Round Rock

Even though housing densities are generally low in Round Rock, three residential areas of the city are considered overcrowded. These areas are the Flats (marked Section I on the map in Figure 2), portions of Old Town (Section II) and newly developed areas along Lake Creek in the southern half of the city (Section III).

The Flats is in the older downtown area, bounded to the north by Brushy Creek. This sector of the city is of importance to our study because opposition to the sewer bond issue emerged most strongly here. Its population is a mixture of minorities, predominantly Mexican-Americans, but with some whites and Blacks. There is a noted absence of people in the 19 to 35 year age group and a preponderance of middle aged and senior citizens. Incomes are low and families are large.

The Old Town population distribution is similar to that of the Flats. The problem of overcrowding in this area contributes to frequent failures in the sewer system which are already caused by seepage and underground springs.

The area near Lake Creek and the railroad tracks is inhabited by Mexican-Americans, whites and Blacks. They are generally migrant workers whose family incomes fall well below poverty level. Families are often very large and may consist of three or four generations, with as many as a dozen children in each generation.

There is a Federal low-income housing development program in the extreme southern part of the city known as Egger's Acres. It consists largely of overcrowded multi-family residences. The small sewer line leading to the area is generally considered inadequate for the population.

The city's white population can be found almost exclusively in two different developments. One, in the far western part of the city, is becoming less desirable to residents because of its proximity to a lime plant to the south. This area is being slowly vacated by the whites as they move in increasing numbers to the second development, a large housing development north of U.S. Highway 79 in the extreme north part of the city.

The following housing characteristics were revealed by the 1960 Census.

- (1) Ninety-two percent of the dwelling units were occupied and 8% were vacant. Of the occupied dwellings, 65% were owner-occupied and 35% were renter-occupied.
- (2) Non-whites are most likely to be renters, and whites are overwhelmingly single-family home owners.
- (3) The average number of rooms in an owner-occupied dwelling unit was 4.9, and the average number of rooms in a renter-occupied dwelling was 4.2.
- (4) The average value of owner-occupied dwellings was \$7,000.
- (5) Seventy percent of the dwelling units were classified as standard, 14% as substandard, and 16% as dilapidated.
- (6) Of the above, 17% of the standard units were deteriorating, and 66% of the substandard units were deteriorating.
- (7) Non-whites, who comprise over one half the population, occupy 11% of the housing supply.
- (8) Of the houses considered dilapidated, 59% were occupied by non-whites.

Government

Round Rock has a strong mayor-council government. The current mayor was elected last year in a rather close election after serving for five years on the City Council. The government structure also includes a position known as city administrator. This officer has no formal power under the city charter, and his duties incorporate those traditionally be-

longing to the city secretary, city manager, department of public works, and city clerk. He stores city records, handles city correspondence, oversees city sewer, water, and garbage service, and in general, is the man most up-to-date on all aspects of the city government.

This system is efficient for the city, but does have some undesirable consequences. The city administrator often finds himself explaining and justifying a particular action of the mayor and city council, an action for which he is not responsible and over which he has no power. The present mayor tends to divert citizens' questions from himself to the administrator, and as a result, the electorate feels it is insulated from the government.

Previous Attempts to Build Sewers

The sewer and water proposal was first placed before the voters on November 4, 1967. In that election, four questions detailed below were placed before the voters.

Question 1

The issuance of \$50,000 in revenue bonds for extensions and improvements to the waterworks system.

Question 2

The issuance of \$180,000 in revenue bonds for extensions and improvements to the sanitary sewer system.

Question 3

The issuance of \$25,000 in general obligation bonds for street improvements.

Question 4

The issuance of \$25,000 in general obligation bonds for construction of a new public library.

During this election, the public was poorly informed on the critical need for sewer and water projects. Little information from city hall was forthcoming; in fact, neither a map nor a description of the proposed improvements could be found at the city offices. Consequently, the public's desire for information was satisfied by the efforts and publications of the bond issue's opponents.

Apparently, most of the funds were to be spent in the large housing development north of the town, an area inhabited mostly by whites. Although the development originally had its own sewer collection system, it was not tied to the main system of Round Rock. Subsequent additions to the settlement were not serviced by any sewer lines at all. While water lines to all houses existed, they were considered inadequate to handle above-average flow volumes experienced during most of the summer months.

Groups for and against passage of the sewer and water proposal coalesced quickly. The buildings of the housing development (the bank president and two members of the city council) formed the nucleus of the group promoting passage. The opposition was a citizens' group made up of lower-income residents of the central and southern sections of town. A third faction, led by another councilman (who later became mayor) opposed only the last two questions in the package on the grounds that they would increase taxes. Both the proponents and the opposition citizens' group regarded this move as strictly political in nature. They charged that he was planning his campaign for mayor in two years and did not want to be known as responsible for any tax increase. Furthermore, much of his financial background would come from the wealthy builders, and much of his popular support would come from whites, who would benefit from the sewer and water proposals.

Citizens' group voiced its opinion that other sections of the town and other racial groups were being slighted in the allocation of improvements. They noted that an overwhelming proportion of the money would benefit about 25% of the town's population, and the town's most affluent white population at that.

The builders countered saying that the situation was most critical in the northern section of town. One builder stated that this project was only the beginning, and that the Mexican-American and Black areas would be served by future bond issues.

The general consensus seemed to be that the builders and real estate interests, who had considerable influence on Round Rock's government were planning to pass bond issues one at a time, knowing that they could not hope to pass a large bond issue which would cover all the needed city improvements. But the voters felt that they were not being given all the facts, and became suspicious of the builders' motives. By the time of the election, it was clear to most observers that the bonds would not pass. The results are given in Table 3.

Table 3. Election Results of November 4, 1967		
Question 1 (water):	For	106
	Against	176
Question 2 (sewer):	For	107
	Against	174
Question 3 (streets):	For	108
	Against	174
Question 4 (library):	For	78
	Against	203

Why did the election fail? The observers of the first election in 1967 have cited the following reasons for the failure of the water and sewer bonds:

- (1) The city council was split on the question of passage of the package as a whole. While the mayor and council supported the passage of the water and sewer bonds, the ambitious councilman and his group did not support the passage of the streets and library questions. The voters were primarily concerned with the split among the council members on the bond package. Consequently, the council's

unity on the water and sewer issues failed to ease the voters' misgivings regarding the total package. Moreover, the voters' misgivings about the city administration were exacerbated by the overt political maneuvers of the ambitious council member. The leader of the citizens' group felt that this man's desire to become mayor alienated many voters who thought that personal politics were out of place in a bond election.

- (2) The critical need for new sewage facilities was not publicized by groups supporting passage of the water and sewer bonds. Consequently, claims that the funds for improvements would not be distributed equally over the town or among the racial groups had a strong influence on the voters' decision-making.
- (3) Both proponents and opponents agreed that the public was confused about the financing of the bond package. The presence of both revenue bonds and general obligation bonds seemed to confuse the voters because they did not understand the differences between the two. Knowing that one would raise property taxes directly and that the other would not, but forgetting which was which, the voters tended to vote against all of the issues.
- (4) All groups agree that the library issue aroused opposition from voters who thought it was an unnecessary frill for a town only a few miles from the largest library in Texas. Its presence on the ballot gave a negative air to the entire package.
- (5) The racial issue, while difficult to evaluate, clearly played a deciding role in the rejection of the package. The residential lines in the community are clearly drawn, with few whites living in the Flats and the southern part of the city. Likewise, few non-whites live anywhere else. The history of the city in fighting Federal integration guidelines coupled with the city council's unwillingness to authorize the spending of funds outside of areas occupied by whites is cited by most observers as a dominant reason for failure.

The Sewer Bond Election of 1968

The question lay dormant for one year. During this time the ambitious councilman appears to have been promised the builders' aid in seeking the office of mayor, since the incumbent was planning to retire. He was pledged to support the entire package of bonds, and he in turn obtained the cooperation of the builders in replacing the general obligation bonds with revenue bonds. It seemed to be possible to finance the street improvements from revenue bonds (even though the streets generate no revenue) by combining revenues from the city water and sewer system and paying off the streets bonds from this fund. The unpopular library bond was dropped from the ballot which was then presented to the voters on December 5, 1968, as follows:

Question 1

The issuance of \$25,000 in revenue bonds for extensions and improvements in the waterworks system.

Question 2

The issuance of \$281,000 in revenue bonds for extensions and improvements in the sanitary sewer system.

Question 3

The issuance of \$50,000 in revenue bonds for street improvements.

This time only the citizens' group was leading any opposition. The builders, the mayor, and all but one member of the city council were in favor. Many arguments against the project were the same as in 1967. The forces in favor argued that the improvements were desperately needed, and the citizens' group continued to oppose what they considered to be an unfair apportionment of the funds.

New arguments against the bond issues were more specific in nature than arguments presented the previous year. Specific examples of pressing needs which would not be alleviated by the passage of the bond issues were cited. An elementary school, located on the clay bed of the western half of Round Rock and attended mostly by non-whites, would not benefit from the improvements. For years the school grounds had been flooded by sewage overflow resulting from poor seepage. It was also noted that sewer lines in the Flats were located above water lines and that their frequent rupture resulted in contamination of water being delivered to the houses in this area. No remedial action was outlined in the proposed bond issue for either of these health hazards.

The citizens' group was indignant that the group of men who had built the northern housing unit were the same ones decrying the poor sewage and water systems in that area. More specifically, charges of "wheeler-dealing" and profiteering at the expense of the city of Round Rock were leveled at the builders' group. The peoples' group further objected to the arrangement between the mayoral candidate and the builders; they were well aware that the candidate had the builders' interest at heart since they were supporting his campaign.

New arguments in favor of the bond package refuted the arguments of discrimination in the allocation of funds that had been used so effectively the previous year. They noted that a large part of the sewer bond money (25%) was being used to add a new pipeline to Egger's Acres. Further, they cited growth figures over the past five years and stated that future growth would be impaired by failure to adopt the new sewer, water and street proposals. New housing would have to be constructed to ensure progress, they said, because only 2% of the housing stock was vacant. This housing, they said could not be served by the present inadequate system. Finally, they said that they had removed most objections by promising no increase in taxes.

The citizens' organization's reaction to this was to point out that Egger's Acres was also a development of the real estate interests of the town. The same charge of profiteering at the expense of the city was renewed against the banker who, they said, had purposely built inadequate sewer and water lines to save himself money. On the second point, they challenged the goal of "progress". They accused the administration and builders of blindly leading the city down a path with only the nebulous goal of "progress" as the end result. They demanded further clarification as to the nature of "progress". Finally, this group stated that while the tax rates would not rise, the increased water and sewer taxes would be regressive in nature, affecting the poorer non-whites more drastically than the white population.

Vehicles for communicating the arguments for and against the bond issues included public debates, posters, telephone surveys, door-to-door canvassing (by the citizen's group), newspaper advertisements and editorials.

When the vote was in, it was clear that the citizens' campaign had been the more effective. The results are given below in Table 4.

Table 4. Election Results of December 5, 1968		
Question 1 (water):	For	145
	Against	200
Question 2 (sewer):	For	146
	Against	196
Question 3 (streets):	For	175
	Against	166

When the subject of the 1968 election was posed to the people who were interviewed, two new reasons were suggested for the failure of the water and sewer bonds.

First, while the mayor, builders and majority of the city council including the mayoral candidate had taken a unified stand in support of the bond

package, their unity now appeared before the voters' eyes as a demonstration of the collusion which had been hinted at in the 1967 election campaign. Effective arguments were made by the opposition that the builder and the real estate developers in the city government were responsible for developing the areas which were cited as desperately in need of improved water and sewer facilities. Intense indignation was to be found in Egger's Acres, where the residents felt that the government funds utilized to construct the housing project had been used ineffectively, resulting in the present undesirable situation. They blamed the builder for this and followed their spokesman's suggestion that the builder himself be required to remedy this situation to which he had contributed.

Second, the point that the increased water and sewer rates would be regressive in nature was conceded by both proponents and opponents to have had some impact among the Mexican-Americans and Blacks of the town, which caused them to vote against passage of the water and sewer bonds. This point may be valid, but seems to be a relatively minor issue in the broad picture of the Round Rock water and sewer defeats.

Mayoralty Election of 1969

The Round Rock water and sewer problem entered an important phase in its resolution during the mayoralty election of 1969. The city council member, backed by the builders, declared his candidacy soon after the second bond defeat, and was shortly followed by the leader of the citizens' group. This put the forces favoring and opposing the water and sewer bonds in direct competition.

After a fairly lengthy campaign, three issues stood out as deciding factors in the election: (1) the passage of the water and sewer bonds; (2) the nature and desirability of "progress"; and (3) the fitness of the citizens' group spokesman to be mayor. This candidate had carried

over a strong position from the 1968 sewer campaign, but his opponent introduced doubts about his ability to run the city since he had been fired from the school system on the grounds of incompetence. Observers agree that, had the balloting between the two men rested on the issues of the water and sewer bonds and "progress", the candidate in question would have won. However, the question of his capabilities played a decisive role in the decision-making of the voters, and the city councilman won in a close vote.

Sewer Bond Election of 1970

One of the first acts of the new administration was a plan for rezoning the city which would have some effect on future sewer and water bond plans. In line with his plan for "progress", the new mayor moved to change the designation of the relatively unpopulated land north and west of Egger's Acres and near the highway from "residential" to "industrial and commercial" in order to lure more industry to Round Rock. Two families who lived in the area and the residents of Egger's Acres objected on the grounds that the proposed industries would be too near their homes. A new citizens' committee was formed which was able to persuade the council to change its plans. Spokesmen for this committee said that they were assured by the leadership of the town that no industry would be able to locate east of Interstate 35. The classification was subsequently changed to the more desirable commercial zone.

The effect of this change of zoning had a direct impact on the future of the water and sewer question in the city. By placating the citizens who had previously followed his opponent, the new mayor enlarged his own political base and had greatly enhanced its position in the community. The fact that the loser took no part in the zoning debate, when coupled with his recent defeat, was seen to indicate his demise as a political force in the town.

Soon after the zoning debate, the mayor and the city council, all of whom had supported him in the mayoralty election, drew up plans for a new water and sewer bond election to be held on May 23, 1970. The amounts of the bonds were substantially increased, reflecting, an administration official stated, their confidence in their ability to secure passage for the entire package. The package that was presented to the voters is given below:

Question 1

The issuance of \$315,000 in revenue bonds for extensions and improvements to the waterworks system.

Question 2

The issuance of \$635,000 in revenue bonds for extensions and improvements to the sanitary sewer system.

In a further attempt to respond to former criticisms of inequity in the allocation of improvements to various sectors of the town, the new council added to the bond package of 1968 funds proposed to take care of the improvements to the elementary school where sewage overflowed, repair to the central city's faulty water and sewer lines, and expansion of service to Egger's Acres and other areas south of the railroad tracks. A detailed map of the improvements attached to a circular describing the nature of the improvements was delivered to every house in the community.

The defeated mayoral candidate again opposed the water and sewer bonds, but found his support greatly decreased from previous years. His stand was that the mayor and city council were in collusion, but his most persuasive arguments against passage were no longer relevant, and he was unable to develop any significant new reasons to vote against the bond.

There were no circulars or posters of opposition to the bond. Speeches, primarily by the unsuccessful candidate were the only means of conveying the message of opposition. The results are given in Table 5 below.

Table 5. Results of Election of May 23, 1970		
Question 1 (water):	For	267
	Against	111
Question 2 (sewer):	For	269
	Against	109

Conclusions

The Round Rock sewer issue is an excellent example of a case where local officials presented a bond issue which was inequitable in its distribution of benefits and costs, and where the voters who were being discriminated against recognized this fact and defeated this proposal at the polls. In effect, what the officials had proposed in the 1967 election was that the entire town should support a project which would benefit only the affluent white population of the town, while important sewer needs of the Black and Mexican-American populations were ignored. On the other hand, once these inequities were eliminated, the opposition to the bond issue was significantly reduced and the bond issue passed easily in 1970.

ACKNOWLEDGEMENTS

This study has been accomplished through the efforts of a large group of people. The project staff is especially indebted to the local officials and other community leaders in the forty cities which were studied who took time to answer our endless questions and direct us to additional valuable sources of information. Without their cooperation, the study could not have been accomplished.

The Investment Bankers Association of America, and in particular, its research director Mr. Robert King, provided us with the data with which to identify a sample and evaluate the extent to which the referendum poses an obstacle to municipalities in financing of water pollution control.

The research was carried out under the direction of Ovadia Salama, and supervised by Robert H. Rea. Ralph Jones and Holly Kinley are largely responsible for the interpretation of the results and the preparation of this report. Others who made important contributions to the research were John Durkey, Ron Patton and Kenneth Marr. The support of the Environmental Protection Agency and the assistance of Robert Brown and Jack Daunt are acknowledged with thanks.

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¹U.S. Department of the Interior, Federal Water Pollution Control Administration, The Cost of Clean Water, January, 1969, p. 1.

²U.S. Department of the Interior, Federal Water Pollution Control Administration, The Economics of Clean Water, Summary Report, March 1970, p. 5.

³For a list of all the Federal programs providing grants for construction of water pollution control facilities, see National League of Cities, Federal Aids to Local Governments.

⁴U.S. Congress, Joint Economic Committee, State and Local Public Facility Needs and Financing, Vol. 1, Dec., 1966, p. 178.

⁵The Economics of Clean Water, Summary Volume, March 1970, pp. 30-31.

⁶Controller General of the United States, Examination Into the Effectiveness of the Construction Grant Program for Abating, Controlling and Preventing Water Pollution, Federal Water Pollution Control Administration, Department of the Interior, Nov. 1969, p. 2.

⁷There are, of course, other means of financing. If the project is small, for example, the municipality may wish to finance it through short-term public borrowings, revolving construction funds or sinking funds related to previous borrowings, or direct appropriations (i. e., the "pay-as-you-go" approach). The last form of financing is particularly popular for small additions or renovations of existing systems. See U.S. Congress, Joint Economic Committee, op. cit., p. 148. Also, private land developers and homebuilders often undertake capital outlays for sewage collection systems. Indeed, according to data collected by the Joint Economic Committee of the Congress, 25% of all sanitary sewer construction has been undertaken by private home builders. Loc. cit., p. 147.

⁸U.S. Department of the Interior, Federal Water Pollution Control Administration, The Economics of Clean Water, Volume I, Detailed Analysis, March 1970.

⁹Dwaine Marvick, The 1960 California Water Bond Issue and the Los Angeles County Electorate: A Statistical and Historical Analysis, University of California at Los Angeles, 1967. (unpublished)

¹⁰Donald J. Robinson, "Financing Water and Pollution Control Facilities," Investment Dealers Digest, Section II, May 27, 1969, p. 35.

¹¹Ibid.

¹²Ibid.

¹³The theory and procedure for systematic sampling is described in Appendix C.

¹⁴James Q. Wilson and Edward C. Banfield, "Public-Regardingness as a Value Premise in Voting Behavior," American Political Science Review, 58 (December, 1964), pp. 876-888.

¹⁵Many of these same leaders found out that their assumptions were not always correct. For example, in Oklahoma City, the residents of two predominantly poor, non-white wards opposed the May 1968 bond issue because it did not provide for either the complete renovation or the removal of a noxious treatment plant which was located in proximity to several schools and many homes in those wards. This opposition caught the proponents of the bond issue unaware, since these wards had traditionally provided substantial support for bond issues.

¹⁶This problem was first raised by W.S. Robinson in an article entitled: "Ecological Correlations and the Behavior of Individuals," American Sociological Review, 15 (June, 1950), 351-357. There are means of minimizing the problems involved in the use of aggregate data. See, e. g., W. Phillips Shively, "Ecological' Inference: The Use of Aggregate Data to Study Individuals," American Political Science Review, 63 (1969), pp. 1183-1196. An example of a recent study which uses aggregate correlations to infer individual-level relationships, is Wilson and Banfield's "Public Regardingness as a Value Premise in Voting Behavior," op. cit. One major difference between the analysis of Wilson and Banfield and the analysis of this study is that Wilson and Banfield studied the voting behavior of carefully selected homogeneous neighborhoods, each containing individuals with a particular income level, ethnic group, etc.

¹⁷See Gerald T. Slatin, "Ecological Analysis of Delinquency: Aggregation Effects," American Sociological Review, 34 (December, 1969), pp. 894-907.

¹⁸Robert Wood, Suburbia (Boston: Houghton Mifflin Company, 1958), pp. 178-179.

¹⁹Robert L. Crain, Elihu Katz and Donald B. Rosenthal, The Politics of Community Conflict, (Indianapolis: The Bobbs-Merrill Company, Inc., 1969).

²⁰Arthur Couch and Kenneth Keniston, "Yeasayers and Naysayers: Agreeing Response Set as a Personality Variable," Journal of Abnormal and Social Psychology, (March, 1950), pp. 151-175.

²¹Robert L. Crain, Elkhu Katz and Donald B. Rosenthal, The Politics of Community Conflict, (Indianapolis: The Bobbs-Merrill Company, Inc., 1969).

²²John E. Mueller, "Voting on the Propositions: Ballot Patterns and Historical Trends in California," LXII American Political Science Review (December, 1969), pp. 1197-1212.

²³See, for example Eugene C. Lee, The Politics of Non-partisanship: A Study of California City Elections (Berkeley: University of California Press, 1960) and Robert C. Wood, Suburbia: Its People and Their Politics (Boston: Houghton Mifflin Company, 1958).

²⁴Wood, op. cit., p. 155.

²⁵See Chapter I for an explanation of these data. U.S. Department of the Interior, Federal Water Pollution Control Administration, March 1970.

²⁶This is feasible from a market point of view since high rates are based on political default and difficulties the trustee then encounters in securing bond payment revenues. But the state would quickly and forcibly collect revenues through local taxation to forestall default, and so the high rates would not be necessary.

²⁷A number of the jurisdictions which require referenda for whatever purpose specify that the approval majority exceed 50%, either to 60% or to 2/3. In Lance v. Board of Education, _____ W. Va. _____ 170 S. E. 2nd 783 (1969), the highest West Virginia court held such a provision in the West Virginia Constitution to be repugnant to the Fourteenth Amendment of the United States Constitution in that it deprived those voting pro of votes equal in weight to those voting con. The case will be heard by the United States Supreme Court, no citation as yet.

²⁸Special districts are actually broken down into two quite distinct political entities. One is the "subdivision" of a municipality, designed to provide area sewer service within a town which does not require service throughout the town. Politically, it is usually a servant of the town government. The other is the "authority," the large inter-city arrangement of a multiplicity of sewer systems, designed either in congested areas to serve efficiently inter-community populations or in rural areas to function on a county-wide or inter-county basis. This type of district has its own governing body which usually operates in a state of relative autonomy.

Both types are legally considered municipal corporations, however; and, in terms of referendum law, no distinction is drawn between the two types. Where the district was a simple adjunct of the county government, it was listed as a county. Where it was a simple adjunct of the municipal government, it was listed as a district, since most small special districts fit into this category.

²⁹ Bond percent also refers to two terms--rate of return (or face rate) and cost of bond. For the most part, statutory bond percents are facepercents. This is the maximum percent the issuer is allowed to pay out to the bondholder as interest. Some states also limit the cost of the bond. Cost of bond includes interest, trustee charges and issuing expenses. The face percent will be the major part, but not all of the cost percent except where the issuer is allowed to issue additional bonds to cover expenses. In such a case, the percents will be identical. There are frequently provisions which limit the amount of the issue to the cost of the project. Designed to prevent arbitrage, these provisions usually have the undesirable side effect of lowering the face rate where the percent ceiling is a cost rate. None of these constraints are very significant.

³⁰ The Investment Bankers Association of America, in preparing our list of referenda, included votes of town meetings. The apparent reason for inclusion of town meetings was the similarity between these meetings and referenda (e. g., both are commonly considered to be examples of "direct legislation"). Such similarities are most evident in the case of simple town meetings where every citizen may vote, as opposed to representative town meetings where only selected representatives may vote. Both types certainly encourage participation by local residents in community decision-making.

³¹ Economic Development Associates, Inc., "A Summary Report on the Athol Comprehensive Plan," (mimeo), p. 1.

³² Ibid., p. 3.

³³ See "Reports of the Town Officers of the Town of Athol, Massachusetts for the Year Ending December 31, 1966," pp. 44-49.

³⁴ All details on the form of government in Athol are from the "By-Laws of the Town of Athol, Massachusetts," March 1, 1951, as amended to June 23, 1969.

³⁵ All data used in this paragraph are derived from this bond prospectus.

³⁶ This is the basic chronology reported by the mayor at that time. The records in the city clerk's office in Avon are incomplete, therefore it is not possible to substantiate fully the events which took place in the early 1960's. All materials in the following section on the bond elections are drawn from data available from the city clerk's files and from recollections of informed observers.

³⁷ DeKalb County Planning Department, Preliminary Land Use Plan, DeKalb County, May 1970, p. 29.

³⁸Ibid., pp. 29-32.

³⁹Furnished by Economic Development Department, DeKalb Chamber of Commerce.

⁴⁰Preliminary Land Use Plan, op. cit., p. 33.

⁴¹League of Women Voters of DeKalb County, "Housing Survey of DeKalb County, Georgia," February 1970.

⁴²Preliminary Land Use Plan, op. cit., p. 32.

⁴³Ibid., pp. 34-35.

⁴⁴Floyd Hunter, Community Power Structure. (Chapel Hill: University of North Carolina Press, 1953.)

1	Accession Number	2	Subject Field & Group	SELECTED WATER RESOURCES ABSTRACTS INPUT TRANSACTION FORM
			06C	

5 ^{Organization} Abt Associates Inc.
55 Wheeler Street
Cambridge, Massachusetts 02138

6 ^{Title} Factors Affecting Pollution Referenda

10	Author(s)	16	Project Designation
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25 ^{Identifiers (Starred First)}

27 ^{Abstract}
Many local governments wanting to finance construction of water pollution control facilities through the sale of municipal bonds are required to obtain authorization from the electorate in the form of a bond referendum. Since defeat of such a bond issue can result in significant delay in implementation of the Federal Water Pollution Control Act, it is important that EPA understand the factors which affect the outcome of these elections.
The study contains conclusions and recommendations about the process by which the project is planned, the role of the bond market, and the referendum as an approval mechanism for public expenditures.

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